

Inventor Search

=> fil biosis hcaplus wpids

FILE 'BIOSIS' ENTERED AT 11:44:35 ON 10 JUN 2002

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FILE 'HCAPLUS' ENTERED AT 11:44:35 ON 10 JUN 2002

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FILE 'WPIDS' ENTERED AT 11:44:35 ON 10 JUN 2002

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=> d que l3;d his l4-

L1 111 SEA "LENHARD J"/AU OR "LENHARD J M"/AU OR ("LENHARD JAMES"/AU
OR "LENHARD JAMES M"/AU OR "LENHARD JAMES MARTIN"/AU)
L2 90 SEA ("PAULIK M"/AU OR "PAULIK M A"/AU OR "PAULIK MAR"/AU OR
"PAULIK MARK"/AU OR "PAULIK MARK A"/AU OR "PAULIK MARK
ANDREW"/AU)
L3 175 SEA L1 OR L2

(FILE 'BIOSIS, HCAPLUS, WPIDS' ENTERED AT 11:38:12 ON 10 JUN 2002)

L4 8 S L3 AND THERMO?
L5 3 S L3 AND HEAT?
L6 4 S L3 AND THERMO?/AB
L7 9 S L4 OR L5 OR L6
L8 6 DUP REM L7 (3 DUPLICATES REMOVED)

FILE 'BIOSIS, HCAPLUS, WPIDS' ENTERED AT 11:44:35 ON 10 JUN 2002

=> d bib ab it 1-6

L8 ANSWER 1-OF 6 BIOSIS COPYRIGHT-2002 BIOLOGICAL-ABSTRACTS INC.DUPLICATE 1
AN 2002:182472 BIOSIS
DN PREV200200182472
TI Synthesis and evaluation of potent and selective beta3 adrenergic receptor
agonists containing acylsulfonamide, sulfonylsulfonamide, and sulfonylurea
carboxylic acid isosteres.
AU Uehling, David E. (1); Donaldson, Kelly H.; Deaton, David N.; Hyman,
Clifton E.; Sugg, Elizabeth E.; Barrett, David G.; Hughes, Robert G.;
Reitter, Barbara; Adkison, Kim K.; Lancaster, Mary E.; Lee, Frank; Hart,
Robert; Paulik, Mark A.; Sherman, Bryan W.; True, Timothy;
Cowan, Conrad
CS (1) Department of Medicinal Chemistry, GlaxoSmithKline, Research Triangle
Park, NC, 27709: deu8774@gsk.com USA
SO Journal of Medicinal Chemistry, (January 31, 2002) Vol. 45, No. 3, pp.
567-583. print.
ISSN: 0022-2623.
DT Article
LA English
AB Starting from phenethanolamine aniline leads 3a and 3b, we have identified
a series of functionally potent and selective beta3 adrenergic receptor
(AR) agonists containing acylsulfonamide, sulfonylsulfonamide, or
sulfonylurea groups within the aniline phenethanolamine series. In beta3,
beta2, and beta1 AR cAMP functional assays, 3a and other right-hand side
(RHS) carboxylate analogues were found to be full agonists that were
modestly selective against beta1 or beta2 ARs, while analogues lacking RHS
acid functionality were active at beta3 AR but not selective. Replacement

of the carboxylate with acylthiazole and acylmethylsulfone gave potent, but only modestly selective, compounds. Increasing the size of the RHS sulfonamide substituent with phenyl or p-toluene afforded compounds with good potency and functional selectivity (beta3 AR pEC50 greater than 8; beta1 and beta2 AR selectivity greater than 40- and 500-fold, respectively). Our SAR studies suggest that the potency and selectivity profile of the best analogues reported here is a result of both the steric bulk and acidity of the RHS sulfonamide NH group. Although all of the analogues had a pharmacokinetic half-life of less than 2 h, acylsulfonamides 43 and 44 did show moderately low clearance in dogs. These two compounds were further evaluated by **thermographic** imaging in mice and were found to produce a robust **thermogenic** response via oral administration.

IT Major Concepts

Pharmacology

IT Chemicals & Biochemicals

acylsulfonamide; beta-3 adrenergic receptor agonist; phenethanolamine aniline; sulfonylsulfonamide; sulfonylurea carboxylic acid: isosteres

ORGN Super Taxa

Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name

mouse (Muridae)

ORGN Organism Superterms

Animals; Chordates; Mammals; Nonhuman Mammals; Nonhuman Vertebrates; Rodents; Vertebrates

L8 ANSWER 2 OF 6 WPIDS (C) 2002 THOMSON DERWENT

AN 2001-367516 [38] WPIDS

DNN N2001-268164 DNC C2001-112699

TI Non-invasive, rapid diagnostic and drug screening methods, e.g. for diagnosis of lipodystrophy, involving measurement of temperature differences using infrared **thermography**.

DC B04 P31

IN LENHARD, J M; PAULIK, M A

PA -(GLAX) GLAXO-GROUP LTD

CYC 94

PI WO 2001035819 A1 20010525 (200138)* EN 106p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
NL OA PT SD SE SL SZ TR TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2001016229 A 20010530 (200152)

ADT WO 2001035819 A1 WO 2000-US31755 20001117; AU 2001016229 A AU 2001-16229 20001117

FDT AU 2001016229 A Based on WO 200135819

PRAI US 1999-441493 19991117

AB WO 200135819 A UPAB: 20010711

NOVELTY - Methods for diagnosing lipodystrophy in a body region in vivo, by: measuring the temperature of the region using infrared **thermography** (ITG), a raise in temperature relative to that in a normal subject indicating lipodystrophy; monitoring the dyslipidemic effect of drug therapy, by monitoring the patient's body temperature using ITG; and determining the temperature of internal tissues or organs.

DETAILED DESCRIPTION - Methods are claimed for: (a) diagnosing lipodystrophy in a body region in vivo, by measuring the temperature of the region (specifically the face or the back of the neck) using infrared **thermography** (ITG), a raise in temperature relative to that in a normal subject indicating lipodystrophy; (b) monitoring the dyslipidemic

effect of drug therapy, by monitoring the patient's body temperature using ITG, a raise in temperature relative to an earlier value indicating a dyslipidemic effect; and (c) determining the temperature of internal tissues or organs, by replacing a portion of the skin near the tissue or organ with an infrared-invisible polymer and measuring the temperature by ITG.

USE - Method (b) is specifically used (claimed) for measuring the temperature of an animal before and after administration of a test agent, a change in temperature indicating that the agent had a **thermodynamic** effect on the tissue or organ. More generally ITG methods are useful for monitoring physiological and molecular events eliciting a **thermogenic** effect in animals (including humans), plants, tissues, cells and cell-free systems, e.g. in screening, identifying and ranking drug candidates for multiple diseases, disorders and conditions. Methods (a) and (b) are especially used (claimed) for diagnosing lipodystrophy in HIV-positive patients and/or for monitoring the dyslipidemic effect of therapy with a protease inhibitor.

ADVANTAGE - A rapid, non-invasive method for measuring real-time **thermogenesis** is provided. In particular a rapid, early method is provided for diagnosis of lipodystrophy syndrome in HIV/AIDS patients receiving protease inhibitor therapy.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic of an infrared **thermography** device suitable for use in imaging **thermogenesis** in a living animal.

Infrared camera 1

Isothermal chamber 2

Heating pad (37 deg. C) 3

Computer interface 4

Interscapular brown tissue 5

Dwg.2/46

L8 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
 AN 1999:753458 HCAPLUS
 DN 132:1820
 TI -Infrared-thermography-for measuring real-time
thermogenesis in organisms and cells
 IN Lenhard, James Martin; Paulik, Mark Andrew
 PA Glaxo Group Limited, UK
 SO PCT Int. Appl., 93 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9960630	A1	19991125	WO 1999-US10579	19990514
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9940774	A1	19991206	AU 1999-40774	19990514
EP 1086494	A1	20010328	EP 1999-924222	19990514
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002516398	T2	20020604	JP 2000-550152	19990514

PRAI US 1998-85736P P 19980515
WO 1999-US10579 W 19990514

AB The present invention relates, in general, to **thermog.** and, in particular, to a method of using IR **thermog.** to monitor physiol. and mol. events that elicit a **thermogenic** response in animals (including humans), plants, tissues, cells and cell-free systems. The present method can be used for screening, identifying, and ranking drug candidates for multiple diseases, disorders and conditions. Three different inbred strains of mice, AKR/J, C57BL/6J, and SWR/J, were maintained on high and low fat diets for 14 wk before treatment with the .beta.3-adrenoceptor agonist, BRL37344. The heat produced in the intrascapular region was measured before and after 60 min treatment using IR **thermog.** The obesity prone mice, AKR/J, had a greater **thermogenic** response to BRL37344 when fed the higher fat diet. The obesity resistant mice, SWR/J, had a greater **thermogenic** response when fed the lower fat diet. There was little difference in the response of C57BL/6J mice on a high or low fat diet.

IT Animal cell line
(HUVEC, VEGF effect on; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)

IT Activity (**thermodynamic**)

Animal

Drug screening

Mouse

Thermogenesis, biological

Thermometry

(IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)

IT Apparatus

(IR **thermog.**; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)

IT Uncoupling protein

RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)

--(UCP2, cloning and expression of, in yeast; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)

IT Adipose tissue

(adipocyte, screening test agent for ability to cause **thermodn** . change in sample contg.; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)

IT Metabolism

(anabolic; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)

IT Adipose tissue

(brown, intrascapular, of mouse, **thermogenesis** measurement in; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)

IT Metabolism

(catabolic; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)

IT Gene

RL: BSU (Biological study, unclassified); BIOL (Biological study) (for heterologous proteins, screening test agent for ability to cause **thermodn**. change in sample contg. cells contg.; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)

IT Gene, animal

RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)

(for uncoupling protein UCP2 and yeast transformation with; IR

- thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Rat
 - (hair loss monitoring in; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Fats and Glyceridic oils, biological studies
 - RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 - (**heat** prodn. in mice strains treated with BRL37344 and diets high or low in; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Feed
 - (high fat or low fat, **heat** prodn. in mice strains treated with BRL37344 and; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Catalysts
 - (immobilized, thermal anal. of reactions with; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Sexual behavior
 - (impotence, **thermogenic** response to pinacidil in genitalia of rats in relation to; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Drug delivery systems
 - (inhalants, nude mouse treatment with, thermal profile of; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Medical goods
 - (inhalers, **thermog.** anal. of; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Lipids, biological studies
 - RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
 - (lipolysis, .beta.-adrenergic receptor agonists effect on, in adipocytes; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Animal cell
 - (mammalian, screening test agent for ability to cause **thermodn** . change in sample contg.; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Mitochondria
 - (monitoring of **heat** prodn. by, in human adipocytes and yeast; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Alopecia
 - (monitoring of, in rats; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Evaporation
- Freezing
- Melting
- Sublimation
 - (monitoring of, of compd. or compn.; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Analysis
 - (of ability of test agent to cause **thermodn**. change; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Molecular association
 - (of ligand and receptor, monitoring of; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Molecular cloning

- (of uncoupling protein UCP2 and transformation of yeast; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Genetic engineering
 - (screening test agent for ability to cause **thermodn.** change in sample contg. cells from; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Animal tissue culture
 - Eukaryote (Eukaryotae)
 - Neoplasm
 - Plant tissue culture
 - (screening test agent for ability to cause **thermodn.** change in sample contg. cells of; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Ligands
 - RL: PEP (Physical, engineering or chemical process); PROC (Process)
 - (screening test agent for ability to cause **thermodn.** change in sample contg. receptor and; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Cell
 - Fungi
 - Plant cell
 - (screening test agent for ability to cause **thermodn.** change in sample contg.; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Carbohydrates, processes
 - Enzymes, processes
 - Inorganic compounds
 - Lipids, processes
 - Nucleic acids
 - Organic compounds, processes
 - Proteins, general, processes
 - Receptors
 - RL: PEP (Physical, engineering or chemical process); PROC (Process)
 - (screening test agent for ability to cause **thermodn.** change in sample contg.; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Physical properties
 - (state, monitoring of, of compd. or compn.; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Imaging
 - (thermal; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Arthritis
 - (**thermogenesis** in; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Diet
 - (**thermogenesis** induced by, in humans; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Antidiabetic agents
 - Diabetes mellitus
 - (**thermogenic** effect of GW1929x on ob/ob mice in relation to; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Antiobesity agents
 - Obesity
 - (**thermogenic** effect of compds. on AKR mice in relation to; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Antibodies

- RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation); PROC (Process)
(to synthetic uncoupling protein UCP2 peptide, prepn. of; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Glycerides, biological studies
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(troglitazone and related agonists effect on accumulation of, in adipocytes; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Yeast
(uncoupling protein UCP2 cloning and expression in and IR **thermog.** of; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Adrenoceptors
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(.beta.3, expression of, of human, in CHO cells, isoproterenol thermal effect in relation to; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT Peroxisome proliferator-activated receptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(.gamma., agonists, effect of, in adipocytes and mice; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 127464-60-2, Vascular endothelial growth factor
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(HUVEC cells and nude mice treated with, **thermogenesis** in; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 250776-65-9P
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(as synthetic uncoupling protein UCP2 peptide, antibodies prepn. to; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 64208-32-8, CGP 12177A
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(db/db mice response to GW1929 and; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 196808-24-9, GW1929
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect of, in adipocytes and in db/db mice treated with CGP12177A; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 18559-94-9, Albuterol
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect of, in adipocytes and mouse; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 74513-77-2, RO363 74772-77-3, Ciglitazone 97322-87-7, Troglitazone 109229-58-5, Englitazone 111025-46-8, Pioglitazone 122320-73-4, BRL49653 138908-40-4, CL316243

- RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect of, in adipocytes; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 83-79-4, Rotenone 370-86-5, Carbonyl cyanide p-(trifluoromethoxy)phenylhydrazine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(human adipocytes and yeast treatment with; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 90730-96-4, BRL37344
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(intrascapular **thermogenesis** and wt. redn. in AKR mice treated with; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 251089-43-7, GW 473559A
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(ob/ob mouse treatment with, thermal effect of; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 50-24-8, Prednisolone
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(redn. in **thermogenesis** in arthritis treated with; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 7683-59-2, Isoproterenol 66575-29-9, Forskolin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(thermal effect of, in CHO cells overexpressing human .beta.3 adrenergic receptor; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 33419-42-0, Etoposide
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(thermal monitoring of hair loss from, in rat pups; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 1310-73-2, Sodium hydroxide, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(**thermogenic** response of, with hydrochloric acid; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 7647-01-0, Hydrochloric acid, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(**thermogenic** response of, with sodium hydroxide; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 60560-33-0, Pinacidil
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**thermogenic** response to, in genitalia of rats; IR **thermog.** for measuring real-time **thermogenesis** in organisms and cells)
- IT 299-42-3, Ephedrine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(thermogenic response to, in humans; IR thermog.
for measuring real-time thermogenesis in organisms and cells)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:601522 HCAPLUS

DN 131:294989

TI Therapeutic approaches to Type 2 diabetes mellitus

AU Rose, Michelle L.; Paulik, Mark A.; Lenhard, James M.

CS Department of Metabolic Diseases, Glaxo Wellcome, Inc., Research Triangle Park, NC, USA

SO Expert Opinion on Therapeutic Patents (1999), 9(9), 1223-1236

CODEN: EOTPEG; ISSN: 1354-3776

PB Ashley Publications

DT Journal; General Review

LA English

AB A review with 151 refs. Diabetes is a significant health care problem worldwide and its incidence is rising. Type 2 diabetes patients are at significant risk of developing addnl. major diseases, esp. obesity, hypertension, and dyslipidemia. All of these conditions are assocd. with adverse cardiovascular events including myocardial infarction, stroke, and death. Current research is focused on several distinct classes of pharmacol. targets in an effort to identify effective therapies for diabetes. Recently, several antidiabetic agents have been identified that promote anabolism, such as agonists for peroxisome proliferator activated receptor .gamma. (PPAR.gamma.) and retinoid X receptor (RXR). PPAR.gamma. and RXR are ligand activated transcription factors that form a heterodimeric complex that mediates fat cell differentiation and expression of genes involved in lipid and carbohydrate metab. PPAR.gamma. and RXR agonists, such as the thiazolidinediones (TZDs) and rexinoids, resp., improve insulin sensitivity and increase repartitioning of sugars and lipids from serum into peripheral tissues. In addn., mol. targets affecting catabolism, such as .beta.3-adrenoceptors (.beta.3-ARs) and uncoupling proteins (UCPs), are being evaluated for treating Type 2 diabetes and obesity. Agents that increase UCP and .beta.3-AR activity increase thermogenesis and metabolic rate, which may result in decreased fat and carbohydrate storage. Since diabetes results from a wide variety of clin. and metabolic problems arising from multiple cellular defects, it is likely that a combination of these pharmacol. approaches will be required to treat the disease. Specifically, a combination of anabolic and catabolic agents that promote fat and carbohydrate utilization in peripheral tissues (i.e., fat and muscle) may provide the greatest benefit for treating patients with diabetes.

IT Diabetes mellitus
(non-insulin-dependent; therapeutic approaches to Type 2 diabetes mellitus)

IT Antidiabetic agents
(therapeutic approaches to Type 2 diabetes mellitus)

IT Retinoid X receptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(therapeutic approaches to Type 2 diabetes mellitus)

IT Peroxisome proliferator-activated receptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(.gamma.; therapeutic approaches to Type 2 diabetes mellitus)

RE.CNT 93 THERE ARE 93 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 5 OF 6 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
 AN 1998:330865 BIOSIS
 DN PREV199800330865
 TI Development of infrared imaging to measure **thermogenesis** in cell culture.
 AU **Paulik, Mark A.**; Hull-Ryde, Emily A.; Buckholz, Richard G.; Lancaster, Mary E.; Dallas, Walter S.; Weiel, James E.; **Lenhard, James M.**
 CS Metabolic Dis., Glaxo Wellcome Inc., 5 Moore Dr., RTP, NC 27709 USA
 SO FASEB Journal, (April 24, 1998) Vol. 12, No. 8, pp. A1302.
 Meeting Info.: Meeting of the American Society for Biochemistry and Molecular Biology Washington, D.C., USA May 16-20, 1998 American Society for Biochemistry and Molecular Biology
 . ISSN: 0892-6638.
 DT Conference
 LA English
 IT Major Concepts
 Cell Biology; Methods and Techniques
 IT Parts, Structures, & Systems of Organisms
 adipocyte; cell: culturing
 IT Methods & Equipment
 IR **thermography**: analytical method
 IT Miscellaneous Descriptors
 thermogenesis; Meeting Abstract
 ORGN Super Taxa
 Fungi: Plantae; Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia; Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
 ORGN Organism Name
 human (Hominidae); yeast (Fungi); C3H10T1/2 (Muridae)
 ORGN Organism Superterms
 Animals; Chordates; Fungi; Humans; Mammals; Microorganisms; Nonhuman Mammals; Nonhuman Vertebrates; Nonvascular Plants; Plants; Primates; Rodents; Vertebrates

L8 ANSWER 6 OF 6 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3
 AN 1998:323638 BIOSIS
 DN PREV199800323638
 TI Development of infrared imaging to measure **thermogenesis** in cell culture: **Thermogenic** effects of uncoupling protein-2, troglitazone, and beta-adrenoceptor agonists.
 AU **Paulik, Mark A.** (1); Buckholz, Richard G.; Lancaster, Mary E.; Dallas, Walter S.; Hull-Ryde, Emily A.; Weiel, James E.; **Lenhard, James M.** (1)
 CS (1) Dep. Metabolic Diseases, GlaxoWellcome Inc., 5 Moore Drive, Research Triangle Park, NC 27709 USA
 SO Pharmaceutical Research (New York), (June, 1998) Vol. 15, No. 6, pp. 944-949.
 ISSN: 0724-8741.
 DT Article
 LA English
 AB Purpose. Although the effects of **thermogenic** agents in cell culture can be measured by direct microcalorimetry, only a few samples can be analyzed over several hours. In this report, we describe a robust non-invasive technique to measure real-time **thermogenesis** of cells cultured in microtiter plates using infrared **thermography** Methods. Yeast were transformed with uncoupling protein-2 (UCP2) or exposed to carbonyl cyanide p-(trifluoromethoxy)phenylhydrazine (FCCP) or rotenone. Adipocytes were exposed to rotenone, FCCP, cycloheximide, troglitazone, or CL316243. **Thermogenesis** was measured using infrared **thermography**. Results. **Thermogenesis**

increased after exposing yeast to the mitochondrial uncoupler, FCCP, or transforming the cells with UCP2. Further, **thermogenesis** in adipocytes was stimulated by CL316243, a beta3-adrenoceptor agonist being developed to treat obesity. The protein synthesis inhibitor, cycloheximide, did not inhibit CL316243-mediated **thermogenesis**. In contrast, the mitochondrial proton transport inhibitor, rotenone, inhibited **thermogenesis** in yeast and adipocytes. Similarly, the antidiabetic agent, troglitazone, suppressed **thermogenesis** in adipocytes. Although increased UCP synthesis resulted in increased **thermogenesis** in yeast, UCP expression did not correlate with **thermogenesis** in adipocytes. Conclusions. The results, taken together with the high resolution (0.002degreeC) and robustness (384-well format) of the approach, indicate infrared-imaging is a rapid and effective method for measuring **thermogenesis** in vitro.

IT Major Concepts
 Biochemistry and Molecular Biophysics; Metabolism; Pharmacology

IT Parts, Structures, & Systems of Organisms
 adipocyte: cultured

IT Chemicals & Biochemicals
 carbonyl cyanide p-(trifluoromethoxy)phenylhydrazone [FCCP]:
 mitochondrial uncoupler; cycloheximide; rotenone; troglitazone:
thermogenic effects; uncoupling protein-2 [UCP2]:
thermogenic effects; CL316243: beta-adrenoceptor agonist

IT Methods & Equipment
 infrared **thermography**: measurement method

IT Miscellaneous Descriptors
 biotechnology; pharmaceuticals

ORGN Super Taxa
 Fungi: Plantae; Hominidae: Primates, Mammalia, Vertebrata, Chordata,
 Animalia

ORGN Organism Name
 human (Hominidae); yeast (Fungi)

ORGN Organism Superterms
 Animals; Chordates; Fungi; Humans; Mammals; Microorganisms; Nonvascular
 Plants; Plants; Primates; Vertebrates

RN 97322-87-7 (TROGLITAZONE)
 370-86-5 (CARBONYL CYANIDE P-(TRIFLUOROMETHOXY) PHENYLHYDRAZONE)
 83-79-4 (ROTENONE)
 66-81-9 (CYCLOHEXIMIDE)
 138908-40-4 (CL316243)

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(FILE 'HCAPLUS' ENTERED AT 11:09:57 ON 10 JUN 2002)

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L1 7061 S (THERMAL? OR THERMOG? OR THERMOD?) (L) IMAG?
L2 1175 S (IR OR INFRA RED OR INFRARED) (L) (THERMOG? OR THERMOMET?)
L3 8089 S L1 OR L2
L4 2120 S THERMOGENESIS
L5 5 S L3 AND L4
L6 17766 S HEAT (L) (PROD?_)
L7 17766 S HEAT (L) (PROD?)
L8 42 S L7 AND L3
L9 2766536 S PROTEIN? OR CARBOHYDRAT? OR LIPID# OR NUCLEIC ACID# OR ENZYME
L10 2768006 S L9 OR ADIPOCYTE#
L11 1888 S (THERMOD? OR THERMOG?) (L) (CHANG? OR RESPONS?)
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L13 6 S L8 AND L10
L14 31 S L5 OR L12 OR L13
L15 24 S L11 (L) MEASUR?
L16 8110 S L15 AND CELL# OR ADIPOCYTE?
L17 1 S L15 AND (CELL# OR ADIPOCYTE?)
L18 1 S L15 AND (ORGANISM? OR PLANT# OR FUNG?)
L19 93630 S NUCLEIC ACID?
L20 4 S L3 AND L19
L21 34 S L14 OR L17 OR L18 OR L20
L22 1042 S L9 AND L3
L23 1 S L22 AND L11
L24 1042 S L10 AND L3
L25 3 S L24 AND MEASUR?
L26 35 S L21 OR L23 OR L25

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FILE 'HCAPLUS' ENTERED AT 11:37:16 ON 10 JUN 2002

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FILE COVERS 1907 - 10 Jun 2002 VOL 136 ISS 24

FILE LAST UPDATED: 7 Jun 2002 (20020607/ED)

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'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

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(FILE 'HCAPLUS' ENTERED AT 11:09:57 ON 10 JUN 2002)

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L14       31 S L5 OR L12 OR L13
L15       24 S L11 (L) MEASUR?
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L18        1 S L15 AND (ORGANISM? OR PLANT# OR FUNG?)
L19     93630 S NUCLEIC ACID?
L20        4 S L3 AND L19
L21       34 S L14 OR L17 OR L18 OR L20
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L24      1042 S L10 AND L3
L25        3 S L24 AND MEASUR?
L26       35 S L21 OR L23 OR L25

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FILE 'HCAPLUS' ENTERED AT 11:37:16 ON 10 JUN 2002

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 OR THERMOD?/OBI) (L) IMAG?/OBI
 L2 1175 SEA FILE=HCAPLUS ABB=ON PLU=ON (IR/OBI OR INFRA RED/OBI OR
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 L4 2120 SEA FILE=HCAPLUS ABB=ON PLU=ON THERMOGENESIS/OBI
 L5 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 AND L4
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 L8 42 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND L3
 L9 2766536 SEA FILE=HCAPLUS ABB=ON PLU=ON PROTEIN?/OBI OR CARBOHYDRAT?/O
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 L11 1888 SEA FILE=HCAPLUS ABB=ON PLU=ON (THERMOD?/OBI OR THERMOG?/OBI)
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 L13 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L8 AND L10
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 L15 24 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 (L) MEASUR?/OBI
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 ADIPOCYTE?/OBI)
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 PLANT#/OBI OR FUNG?/OBI)
 L19 93630 SEA FILE=HCAPLUS ABB=ON PLU=ON NUCLEIC ACID?/OBI
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 L23 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 AND L11
 L24 1042 SEA FILE=HCAPLUS ABB=ON PLU=ON L10 AND L3
 L25 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L24 AND MEASUR?/OBI
 L26 35 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 OR L23 OR L25

=> d .ca 1-35

L26 ANSWER 1 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:210330 HCAPLUS

DOCUMENT NUMBER: 136:364076

TITLE: Increased insulin sensitivity in IGF-I
receptor-deficient brown adipocytesAUTHOR(S): Mur, Cecilia; Valverde, Angela M.; Kahn, C. Ronald;
Benito, ManuelCORPORATE SOURCE: Departamento de Bioquímica y Biología Molecular,
Centro Mixto CSIC/UCM, Facultad de Farmacia,
Universidad Complutense, Madrid, 28040, SpainSOURCE: Diabetes (2002), 51(3), 743-754
CODEN: DIAEAB; ISSN: 0012-1797

PUBLISHER: American Diabetes Association

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Immortalized brown adipocyte cell lines have been generated from fetuses
 of mice deficient in the insulin-like growth factor I receptor gene
 (IGF-IR-/-), as well as from fetuses of wild-type mice (IGF-IR+/+). These
 cell lines maintained the expression of adipogenic- and
 thermogenic-differentiation markers and show a multi-locular fat droplets
 phenotype. IGF-IR-/- brown adipocytes lacked IGF-IR protein expression;

insulin receptor (IR) expression remained unchanged as compared with wild-type cells. Insulin-induced tyrosine autophosphorylation of the IR .beta.-chain was augmented in IGF-IR-deficient cells. Upon insulin stimulation, tyrosine phosphorylation of (insulin receptor substrate-1) IRS-1 was much higher in IGF-IR-/- brown adipocytes, although IRS-1 protein content was reduced. In contrast, tyrosine phosphorylation of IRS-2 decreased in IGF-IR-deficient cells; its protein content was unchanged as compared with wild-type cells. Downstream, the assocn. IRS-1/growth factor receptor binding protein-2 (Grb-2) was augmented in the IGF-IR-/- brown adipocyte cell line. However, SHC expression and SHC tyrosine phosphorylation and its assocn. with Grb-2 were unaltered in response to insulin in IGF-IR-deficient brown adipocytes. These cells also showed an enhanced activation of mitogen-activated protein kinase (MAPK) kinase (MEK1/2) and p42/p44 mitogen-activated protein kinase (MAPK) upon insulin stimulation. In addn., the lack of IGF-IR in brown adipocytes resulted in a higher mitogenic response (DNA synthesis, cell no., and proliferating cell nuclear antigen expression) to insulin than wild-type cells. Finally, cells lacking IGF-IR showed a much lower assocn. between IR or IRS-1 and phosphotyrosine phosphatase 1B (PTP 1B) and also a decreased PTP1B activity upon insulin stimulation. However, PTP1B/Grb-2 assocn. remained unchanged in both cell types, regardless of insulin stimulation. Data presented here provide strong evidence that IGF-IR-deficient brown adipocytes show an increased insulin sensitivity via IRS-1/Grb-2/MAPK, resulting in an increased mitogenesis in response to insulin.

CC 2-6 (Mammalian Hormones)

Section cross-reference(s): 13

IT **Thermogenesis**, biological

(protein tyrosine phosphatase 1B expression and its assocn. with insulin receptor and IRS-1 in IGF-I receptor-deficient brown adipocytes in relation to)

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26- ANSWER-2 OF 35 HCAPLUS -COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:109758 HCAPLUS

DOCUMENT NUMBER: 136:291828

TITLE: **Infra-red thermography**
revealed a role for mitochondria in pre-symptomatic cooling during harpin-induced hypersensitive response

AUTHOR(S): Boccara, Martine; Boue, Christine; Garmier, Marie; De Paepe, Rosine; Boccara, Albert-Claude

CORPORATE SOURCE: UMR217, Laboratoire de Pathologie Vegetale, Paris, 75005, Fr.

SOURCE: Plant Journal (2001), 28(6), 663-670

CODEN: PLJUED; ISSN: 0960-7412

PUBLISHER: Blackwell Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The establishment of *Erwinia amylovora* harpin-induced hypersensitive response (HR) in *Nicotiana glauca* was followed by infra-red thermog. (IRT). Three to four hours after elicitation, the temp. decreased in the harpin-infiltrated zone assocd. to stomatal opening. The marked drop in temp. which reached 2.degree.C and preceded necrosis symptoms for several hours, is thus likely caused by higher transpiration. Neither of these effects was obsd. in a respiratory mutant, affected in complex I structure and function and over-expressing alternative oxidase, indicating that they are directly or indirectly mediated by mitochondrial function. However, as the HR establishment was similar in both wild type and mutant, cell

death was either uncorrelated with the obsd. epidermal changes or occurred by a different signalling pathway in the two genotypes. IRT revealed a novel aspect of plant-pathogen interactions and could be applied to screen for mutants affected in elicitor signalling and/or for respiratory mutants.

CC 11-5 (Plant Biochemistry)
Section cross-reference(s): 10

IT Erwinia amylovora
Mitochondria
Tobacco (Nicotiana sylvestris)
(**infra-red thermog.** revealed a role for mitochondria in pre-symptomatic cooling during harpin-induced hypersensitive **response**)

IT Leaf
(stoma; **infra-red thermog.** revealed a role for mitochondria in pre-symptomatic cooling during harpin-induced hypersensitive **response**)

IT **Imaging**
(**thermal; infra-red thermog.** revealed a role for mitochondria in pre-symptomatic cooling during harpin-induced hypersensitive **response**)

IT 151438-54-9, Harpin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**infra-red thermog.** revealed a role for mitochondria in pre-symptomatic cooling during harpin-induced hypersensitive **response**)

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 3 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:868945 HCAPLUS

DOCUMENT NUMBER: 136:575

TITLE: **Infrared thermography and methods of use**

INVENTOR(S): Marek, Przemyslaw A.; Trocha, Andzrej M.

PATENT ASSIGNEE(S): Marek, Przemyslaw, USA

SOURCE: U.S. Pat. Appl. Publ., 31 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001046471	A1	20011129	US 2001-850081	20010508
PRIORITY APPLN. INFO.:			US 2000-202935P	P 20000509

OTHER SOURCE(S): MARPAT 136:575

AB The present invention describes rapid noninvasive methods for measuring vasodilation or changes in blood flow in a patient following administration of at least one compd. that donates, transfers or releases nitric oxide, elevates endogenous levels of endothelium-derived relaxing factor, stimulates endogenous synthesis of nitric oxide or is a substrate for nitric oxide synthase and/or at least one vasoactive agent. The method comprises the administration of at least one compd. that donates, transfers or releases nitric oxide, elevates endogenous levels of endothelium-derived relaxing factor, stimulates endogenous synthesis of nitric oxide or is a substrate for nitric oxide synthase and/or at least one vasoactive agent to the patient followed by monitoring the temp. change of an area of interest using IR thermog. The present invention

provides methods for diagnosing diseases or disorders related to vasodilation and changes in blood flow, such as, sexual dysfunction, Raynaud's syndrome, inflammation, hypertension, gastrointestinal disorders and central nervous system disorders. The sexual dysfunction is preferably female sexual dysfunction and female sexual arousal. The vasoactive agents include potassium channel activators, calcium channel blockers, .alpha.-adrenergic receptor antagonists, .beta.-blockers, phosphodiesterase inhibitors, adenosine, ergot alkaloids, vasoactive intestinal peptides, prostaglandins, dopamine agonists, opioid antagonists, endothelin antagonists and thromboxane inhibitors. The present invention can also be used to screen and identify drug candidates for treating diseases, disorders and conditions resulting from vasodilation or changes in blood flow. The present invention also describes compns. comprising at least one S-nitrosothiol compd. for diagnosing, monitoring and/or treating female sexual dysfunctions.

- IC ICM A61K049-00
ICS A61K031-21; A61K038-05; A61K038-06
- NCL 424009100
- CC 1-1 (Pharmacology)
Section cross-reference(s): 9, 14, 63
- ST sexual dysfunction diagnosis therapy **IR thermog**
nitrosothiol; vasoactive agent sexual dysfunction diagnosis
thermog; nitric oxide donor vasodilation measurement
thermog; blood flow dysfunction measurement **thermog**
- IT Body temperature
Circulation
Dopamine agonists
Drug screening
Hypertension
Inflammation
Opioid antagonists
Vasodilation
(**IR thermog.** for measuring vasodilation or
changes in blood flow following administration of nitric oxide
donor)
- IT Peptides, biological studies
Prostaglandins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**IR thermog.** for measuring vasodilation or
changes in blood flow following administration of nitric oxide
donor)
- IT Blood vessel, disease
(Raynaud's phenomenon; **IR thermog.** for measuring
vasodilation or changes in blood flow following
administration of nitric oxide donor)
- IT Ion channel blockers
(calcium; **IR thermog.** for measuring vasodilation or
changes in blood flow following administration of nitric oxide
donor)
- IT Nervous system
(central, disease; **IR thermog.** for measuring
vasodilation or changes in blood flow following
administration of nitric oxide donor)
- IT Contraceptives
(condoms; **IR thermog.** for measuring vasodilation or
changes in blood flow following administration of nitric oxide
donor)
- IT Digestive tract
(disease; **IR thermog.** for measuring vasodilation or
changes in blood flow following administration of nitric oxide

- donor)
- IT Sexual behavior
(disorder; **IR thermog.** for measuring vasodilation
or **changes** in blood flow following administration of nitric
oxide donor)
- IT Drug delivery systems
(emulsions; **IR thermog.** for measuring vasodilation
or **changes** in blood flow following administration of nitric
oxide donor)
- IT Alkaloids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ergot; **IR thermog.** for measuring vasodilation or
changes in blood flow following administration of nitric oxide
donor)
- IT Drug delivery systems
(foams; **IR thermog.** for measuring vasodilation or
changes in blood flow following administration of nitric oxide
donor)
- IT Drug delivery systems
(gels; **IR thermog.** for measuring vasodilation or
changes in blood flow following administration of nitric oxide
donor)
- IT Drug delivery systems
(inhalants; **IR thermog.** for measuring vasodilation
or **changes** in blood flow following administration of nitric
oxide donor)
- IT Thromboxanes
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors; **IR thermog.** for measuring vasodilation
or **changes** in blood flow following administration of nitric
oxide donor)
- IT Drug delivery systems
(injections; **IR thermog.** for measuring vasodilation
or **changes** in blood flow following administration of nitric
oxide donor)
- IT Drug delivery systems
(liposomes; **IR thermog.** for measuring vasodilation
or **changes** in blood flow following administration of nitric
oxide donor)
- IT Drug delivery systems
(lotions; **IR thermog.** for measuring vasodilation or
changes in blood flow following administration of nitric oxide
donor)
- IT Thiols (organic), biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
(Uses)
(nitroso-; **IR thermog.** for measuring vasodilation
or **changes** in blood flow following administration of nitric
oxide donor)
- IT Drug delivery systems
(ointments, creams; **IR thermog.** for measuring
vasodilation or **changes** in blood flow following
administration of nitric oxide donor)
- IT Drug delivery systems
(ointments; **IR thermog.** for measuring vasodilation
or **changes** in blood flow following administration of nitric
oxide donor)
- IT Drug delivery systems
(oral; **IR thermog.** for measuring vasodilation or

- changes in blood flow following administration of nitric oxide donor)
- IT Ion channel openers
(potassium; **IR thermog.** for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)
- IT Drug delivery systems
(sprays; **IR thermog.** for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)
- IT Imaging
(thermal; **IR thermog.** for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)
- IT Drug delivery systems
(topical; **IR thermog.** for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)
- IT Drug delivery systems
(transurethral; **IR thermog.** for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)
- IT Adrenoceptor antagonists
(.alpha.-; **IR thermog.** for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)
- IT Adrenoceptor antagonists
(.beta.-; **IR thermog.** for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)
- IT 375371-24-7P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(**IR thermog.** for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)
- IT 57564-91-7P, S-Nitrosoglutathione 375371-22-5P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**IR thermog.** for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)
- IT 542-56-3, Isobutyl nitrite
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**IR thermog.** for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)
- IT 10102-43-9, Nitric oxide, biological studies 90880-94-7, Endothelium-derived relaxing factor 125978-95-2, Nitric oxide synthase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**IR thermog.** for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)
- IT 52-67-5 70-18-8, Glutathione, reactions 129-64-6, cis-5-Norbornene-

endo-2,3-dicarboxylic anhydride 7684-18-6, 1-Amino-2-methylpropane-2-thiol 61040-78-6, 2,4,6-Trimethoxybenzyl alcohol 375371-23-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(IR thermog. for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)

IT 346684-19-3P 364057-10-3P 375371-28-1P 375371-30-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(IR thermog. for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)

IT 56-85-9, Glutamine, biological studies 56-87-1, Lysine, biological studies 58-61-7, Adenosine, biological studies 70-26-8, Ornithine 74-79-3, L-Arginine, biological studies 74-79-3D, L-Arginine, nitrosylated derivs. 156-86-5, L-Homoarginine 156-86-5D, L-Homoarginine, nitrosylated derivs. 372-75-8, Citrulline 37221-79-7, Vasoactive intestinal peptide 51209-75-7, S-Nitrosocysteine 53054-07-2 53054-07-2D, nitrosylated derivs. 56577-02-7, S-Nitroso-N-acetylcysteine 79032-48-7, S-Nitroso-N-acetylpenicillamine 122130-63-6, S-Nitrosocaptopril 139427-42-2, S-Nitrosohomocysteine 162758-33-0, S-Nitrosocysteinyglycine

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(IR thermog. for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)

IT 116243-73-3, Endothelin

RL: BSU (Biological study, unclassified); BIOL (Biological study) (antagonists; IR thermog. for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)

IT 9025-82-5, Phosphodiesterase

RL: BSU (Biological study, unclassified); BIOL (Biological study) (inhibitors; IR thermog. for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)

IT 9000-96-8, Arginase

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (inhibitors; IR thermog. for measuring vasodilation or changes in blood flow following administration of nitric oxide donor)

L26 ANSWER 4 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:736711 HCAPLUS

DOCUMENT NUMBER: 135:310994

TITLE: Thermographic imaging materials for heat mode recording and sulfonates and their polymers as acid generators for the materials

INVENTOR(S): Okawa, Atsuhiko

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 31 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001277731	A2	20011010	JP 2000-92008	20000329

OTHER SOURCE(S): MARPAT 135:310994

AB The thermog. materials showing high sensitivity and good storage stability have on supports (A) sulfonic acid ester derivs. I (R1 = alkyl, aryl, heterocyclic; R2 = substituent; R3, R4 = H, substituent; X = atom. group for forming ring; R2, R3, or R4 may be bonded with X and form ring) as thermal acid generators and (B) compds. whose absorptions in 360-700 nm are changed by innermol. or intermol. reaction induced by the generated acids. The thermal acid generators may be polymers having mer units bearing moiety of A and also having mer units bearing moiety of B, thereby functioning properties of A and B in 1 mol. The thermog. materials may contain IR-absorbing dyes and form images by IR laser light irradiation. The thermog. materials will not contain Ag compds. or their salts.

IC ICM B41M005-30

ICS B41M005-26; C08F012-30; C08F020-38; C08F212-08; C08F212-12;
C08F212-14; C08F216-14; C08F216-16; C08F216-18; C08F218-04;
C08F218-08; C08F220-14; C08F220-16; C08F220-18; C08F220-28;
C08F220-30; C08F220-36; C08F220-56; C08F220-58

CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Thermographic** copying

(heat mode recording materials containing sulfonate acid generators and compds. changing absorption by acids)

L26 ANSWER 5 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:676314 HCAPLUS

DOCUMENT NUMBER: 135:222342

TITLE: A device for detecting specific hybridization in microarrays using temperature gradients and imaging of hybridizations labeled with a reporter dye

INVENTOR(S): Nakao, Motonao; Yamamoto, Kenji; Yoshii, Junji; Mizuno, Katsuya

PATENT ASSIGNEE(S): Hitachi Software Engineering Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 20 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1132485	A2	20010912	EP 2001-105870	20010309
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001255328	A2	20010921	JP 2000-67684	20000310
US 2002022226	A1	20020221	US 2001-802804	20010309
PRIORITY APPLN. INFO.:		JP 2000-67684	A	20000310

AB The present invention detects and quantitates only specific hybridization bindings. A biochip spotted with a plurality of probe biopolymers is accommodated in a container into which a washing soln. is supplied from a liq. supplying unit. A heating block controls the temp. of the biochip according to a predetd. time pattern. An imaging device captures an image of the spot surface of the biochip at predetd. intervals. The plurality of images picked up with the pickup unit are stored in a computer. By analyzing the images for individual spots, hybridization can be detected with high reliability for every spot without being influenced by optimal hybridization temps. which differ depending upon the types of probes on the spots.

IC ICM C12Q001-68

CC 3-1 (Biochemical Genetics)

Section cross-reference(s): 9
 ST biochip hybridization specificity temp gradient; **thermal** device
 biochip hybridization specificity; fluorescent dye reporter hybridization
 specificity **thermal** gradient; fluorometry **imaging**
 hybridization specificity **thermal** gradient
 IT DNA microarray technology
 Fluorometry
 Heating systems
 Nucleic acid hybridization
 Optical imaging devices
 (device for detecting specific hybridization in microarrays using temp.
 gradients and imaging of hybridizations labeled with reporter dye)

L26 ANSWER 6 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:43850 HCAPLUS

DOCUMENT NUMBER: 134:348462

TITLE: Can non-shivering **thermogenesis** in brown
 adipose tissue following NA injection be quantified by
changes in overlying surface temperatures
 using **infrared thermography**?

AUTHOR(S): Jackson, D. M.; Hambly, C.; Trayhurn, P.; Speakman, J.
 R.

CORPORATE SOURCE: Department of Zoology, Aberdeen Centre for Energy
 Regulation and Obesity (ACERO), University of
 Aberdeen, AB24 2TZ, UK

SOURCE: Journal of Thermal Biology (2001), 26(2), 85-93
 CODEN: JTBIDS; ISSN: 0306-4565

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors aimed to investigate whether infra red thermog. (IRT) can be
 used to measure and quantify non-shivering thermogenesis (NST) in the
 short-tailed field vole *Microtus agrestis*, by directly comparing it with a
 std. method, i.e., metabolic response following Noradrenaline injection
 (NA). Mean skin surface temp. overlying Brown adipose tissue (BAT) depot
 was 0.82.degree.C higher than mean surface temp. that did not overly BAT.
 The difference in temp. increased by 1.26.degree.C after NA was
 administered. Mean skin surface temp. overlying BAT increased by
 0.32.degree.C after NA was administered; however, surface temp. decreased
 by 1.32.degree.C after saline was administered. Mean skin surface temp.
 overlying BAT did not change significantly between warm and cold
 acclimated voles; in contrast metabolic peak following NA injection
 significantly increased in cold acclimated voles. There was no
 significant correlation between change in surface temp. after NA injection
 and metabolic peak following NA injection. The results of this study
 suggest that IRT is not a sensitive enough method to measure changes in
 NST capacity in BAT following NA injection, or to detect changes in NST
 capacity induced by cold acclimation. However, IRT can distinguish
 between skin surfaces overlying BAT and skin surfaces that do not.

CC 2-8 (Mammalian Hormones)

ST non shivering **thermogenesis** noradrenaline vole thermog

IT Body temperature
 (at skin surface; non-shivering **thermogenesis** in brown
 adipose tissue following noradrenaline injection cannot be quantified
 by **changes** in overlying surface temps. using **IR**
thermog. in short-tailed field vole)

IT Adipose tissue
 (brown; non-shivering **thermogenesis** in brown adipose tissue
 following noradrenaline injection cannot be quantified by
changes in overlying surface temps. using **IR**

- thermog. in short-tailed field vole)
- IT Microtus agrestis
Thermogenesis, biological
 (non-shivering **thermogenesis** in brown adipose tissue following noradrenaline injection cannot be quantified by **changes** in overlying surface temps. using IR **thermog.** in short-tailed field vole)
- IT **Imaging**
 (thermal; non-shivering **thermogenesis** in brown adipose tissue following noradrenaline injection cannot be quantified by **changes** in overlying surface temps. using IR **thermog.** in short-tailed field vole)
- IT 51-41-2, Noradrenaline
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 (non-shivering **thermogenesis** in brown adipose tissue following noradrenaline injection cannot be quantified by **changes** in overlying surface temps. using IR **thermog.** in short-tailed field vole)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 7 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:715410 HCAPLUS
 DOCUMENT NUMBER: 133:288919
 TITLE: Heat-developable image-forming material and method
 INVENTOR(S): Ohkawa, Atsuhiko
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 39 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000280632	A2	20001010	JP 1999-93085	19990331

OTHER SOURCE(S): MARPAT 133:288919

AB In the material contg. a compd. (A) having a formula W1OP1 (W1 = acid residue W1OH; P1 = substituent released by heat or acid) which generates an acid by the action of heat or an acid, and a compd. (B) which changes absorption at 360-900 nm by the inter- or intra-mol. reaction caused by the acid, A and/or B is a mixt. of a low-mol.-wt. and high-mol.-wt. compds. The material may contain a polymer having the acid generating part and the absorption changeable part. The material shows good storage stability and high sensitivity and recorded by low power laser without causing ablation.

IC ICM B41M005-30
 ICS B41M005-26; G03F001-06

CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38

ST heat developable **image** forming material; **thermog** material acid generator; absorption **changeable** compd **thermog** material

IT **Thermographic** copying
 (heat-developable **image**-forming material contg. acid generator and absorption **changeable** compd.)

L26 ANSWER 8 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:712849 HCAPLUS

DOCUMENT NUMBER: 133:288916

TITLE: Non-silver type heat-developable image-forming material with undercoat layer containing vinylidene chloride polymer

INVENTOR(S): Ohkawa, Atsuhiko; Naoi, Takashi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 46 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000280625	A2	20001010	JP 1999-93086	19990331

OTHER SOURCE(S): MARPAT 133:288916

AB The material developed at 80-140.degree. comprises a support having an undercoat layer with thickness .gtoreq.0.3 .mu.m (total thickness on one side) on both sides contg. vinylidene chloride copolymer with .gtoreq.70 wt.% vinylidene chloride monomer as a repeating unit. The material may contain a compd. generating an acid by the action of heat or an acid and another compd. which changes absorption at 360-900 nm by the inter- or intra-mol. reaction caused by the acid. The material shows good dimensional stability and thermal shrinkage is prevented on development.

IC ICM B41M005-26

ICS B41M005-30; G03C001-675

CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST **thermog** material undercoat layer vinylidene chloride polymer; heat developable **image** forming material; acid generator
absorption **changeable** compd **thermog**

IT **Thermographic** copying

(non-silver type heat-developable **image**-forming material with undercoat layer contg. vinylidene chloride polymer)

L26 ANSWER 9 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:418974 HCAPLUS

DOCUMENT NUMBER: 134:112364

TITLE: Sub-single molecule determination of nonfluorescent species by scanning thermal lens microscope and its application to single-cell **measurement**

AUTHOR(S): Kitamori, Takehiko; Uchida, Marika; Egami, Akiko; Sekiguchi, Kazuya; Zheng, Jinjian; Sawada, Tsuguo; Tokeshi, Manabu; Sato, Kiichi; Kimura, Hiroko

CORPORATE SOURCE: Dep. Appl. Chem., Grad. Sch. Eng., Univ. of Tokyo, Toyko, Japan

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2000), 3922(Scanning and Force Microscopies for Biomedical Applications II), 67-72
CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We have developed a thermal lens microscope which indexes and detects photothermal effect at sub-single mols. level in/on liqs. and condensed

media. The thermal lens microscope can det. non-fluorescent mols. without receiving serious effects of light scattering in/on various condensed phase substances, and it can be applied to imaging of the distribution of non-fluorescent mols. by scanning on the sample. These characteristics of the thermal lens microscope are suitable for ultra sensitive anal. and imaging of biomedical substance in/on a single cell, sepn. media, and microfabricated chem. devices. We applied the thermal lens microscope to det. an ultratrace chem. species in various media.

CC 9-1 (Biochemical Methods)
 ST mol detn nonfluorescent species; scanning thermal lens microscope
 cell
 IT Microscopes
 (Scanning thermal lens; sub-single mol. detn. of nonfluorescent species
 by scanning thermal lens microscope and application to single-
 cell measurement)
 IT Cell
 Imaging
 Liquids
 Molecules
 Thermo-optical effect
 (sub-single mol. detn. of nonfluorescent species by scanning
 thermal lens microscope and application to single-cell
 measurement)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 10 OF 35 HCAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 2000:335646 HCAPLUS
 DOCUMENT NUMBER: 132:330589
 TITLE: Electrodynamically focused thermal cycling device
 INVENTOR(S): Austin, Robert H.; Cox, Edward C.; Chou, Chia-Fu
 PATENT ASSIGNEE(S): Princeton University, USA
 SOURCE: PCT Int. Appl., 27 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000028313	A1	20000518	WO 1999-US26307	19991109
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6203683	B1	20010320	US 1998-188284	19981109

PRIORITY APPLN. INFO.: US 1998-188284 A 19981109

AB A device for the integrated micromanipulation, amplification, and anal. of polyelectrolytes such as DNA comprises a microchip which contains electrodes for dielectrophoresis powered by an AC signal generator, and a trapping electrode attached to a d.c. source that can be heated to specific temps. Nucleic acids can be heated and cooled to allow for denaturation, the annealing of complementary primers and enzymic reactions, as in a thermocycling reaction. After such a reaction has been

completed on the trapping electrode, the dielectrophoretic can be switched to a d.c. to release the product and direct it through a matrix for fractionation and/or anal. The device includes data anal. equipment for the control of these operations, and imaging equipment for the anal. of the products. The invention permits the efficient handling of minute samples in large nos., since reactions occur while sample material is positioned on an electrode in a microfluidic channel. Because the positioning, reactions, and release into a fractioning matrix are all integrated from the focusing wire, the need to transfer samples into different tubes is eliminated, thus increasing the efficiency and decreasing the possibility of damage to the samples.

IC ICM G01N027-26

CC 3-1 (Biochemical Genetics)

IT **Nucleic acid** amplification (method)
(DNA; electrodynamically focused thermal cycling device)

IT Apparatus

DNA sequence analysis

Dielectrophoresis

Electric circuits

Electrodes

Optical **imaging** devices

Polyelectrolytes

Seals (parts)

Sensors

Thermal cycling

(electrodynamically focused **thermal** cycling device)

IT DNA

Nucleic acids

RL: ANT (Analyte); PEP (Physical, engineering or chemical process); PRP (Properties); ANST (Analytical study); PROC (Process)

(electrodynamically focused thermal cycling device)

IT Primers (**nucleic acid**)

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(electrodynamically focused thermal cycling device)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 11 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:753458 HCAPLUS

DOCUMENT NUMBER: 132:1820

TITLE: **Infrared thermography for measuring real-time thermogenesis in organisms and cells**

INVENTOR(S): Lenhard, James Martin; Paulik, Mark Andrew

PATENT ASSIGNEE(S): Glaxo Group Limited, UK

SOURCE: PCT Int. Appl., 93 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9960630	A1	19991125	WO 1999-US10579	19990514
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,			

MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,
 ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,
 CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9940774 A1 19991206 AU 1999-40774 19990514

EP 1086494 A1 20010328 EP 1999-924222 19990514

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, FI

JP 2002516398 T2 20020604 JP 2000-550152 19990514

PRIORITY APPLN. INFO.:

US 1998-85736P P 19980515

WO 1999-US10579 W 19990514

AB The present invention relates, in general, to thermog. and, in particular, to a method of using IR thermog. to monitor physiol. and mol. events that elicit a thermogenic response in animals (including humans), plants, tissues, cells and cell-free systems. The present method can be used for screening, identifying, and ranking drug candidates for multiple diseases, disorders and conditions. Three different inbred strains of mice, AKR/J, C57BL/6J, and SWR/J, were maintained on high and low fat diets for 14 wk before treatment with the .beta.3-adrenoceptor agonist, BRL37344. The heat produced in the intrascapular region was measured before and after 60 min treatment using IR thermog. The obesity prone mice, AKR/J, had a greater thermogenic response to BRL37344 when fed the higher fat diet. The obesity resistant mice, SWR/J, had a greater thermogenic response when fed the lower fat diet. There was little difference in the response of C57BL/6J mice on a high or low fat diet.

IC ICM H01L029-04

ICS G01N007-00; G01N025-18; G01N025-08; G01N027-416; G01N001-18;
 G01N021-62

CC 9-16 (Biochemical Methods)

Section cross-reference(s): 1, 13, 17, 73

ST IR thermog thermogenesis organism

cell; fat diet adrenoceptor agonist thermal
 imaging mouse; obesity diet thermal imaging
 mouse; drug screening IR thermog; animal
 thermal imaging; plant thermal
 imaging

IT Animal cell line

(HUVEC, VEGF effect on; IR thermog. for
 measuring real-time thermogenesis in
 organisms and cells)

IT Activity (thermodynamic)

Animal

Drug screening

Mouse

Thermogenesis, biological

Thermometry

(IR thermog. for measuring real-time
 thermogenesis in organisms and cells)

IT Apparatus

(IR thermog.; IR thermog. for
 measuring real-time thermogenesis in
 organisms and cells)

IT Uncoupling protein

RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified);

BIOL (Biological study); PREP (Preparation)

(UCP2, cloning and expression of, in yeast; IR
 thermog. for measuring real-time
 thermogenesis in organisms and cells)

IT Adipose tissue

(adipocyte, screening test agent for ability to cause

- thermodn. change in sample contg.; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Metabolism
(anabolic; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Adipose tissue
(brown, intrascapular, of mouse, thermogenesis measurement in; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Metabolism
(catabolic; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Gene
RL: BSU (Biological study, unclassified); BIOL (Biological study) (for heterologous proteins, screening test agent for ability to cause thermodn. change in sample contg. cells contg.; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Gene, animal
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(for uncoupling protein UCP2 and yeast transformation with; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Rat
(hair loss monitoring in; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Fats and Glyceridic oils, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(heat prodn. in mice strains treated with BRL37344 and diets high or low in; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Feed
(high fat or low fat, heat prodn. in mice strains treated with BRL37344 and; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Catalysts
(immobilized, thermal anal. of reactions with; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Sexual behavior
(impotence, thermogenic response to pinacidil in genitalia of rats in relation to; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Drug delivery systems
(inhalants, nude mouse treatment with, thermal profile of; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Medical goods
(inhalers, thermog. anal. of; IR thermog.

- for measuring real-time thermogenesis in organisms and cells)
- IT **Lipids**, biological studies
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
 (lipolysis, .beta.-adrenergic receptor agonists effect on, in adipocytes; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT **Animal cell**
 (mammalian, screening test agent for ability to cause thermodyn. change in sample contg.; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT **Mitochondria**
 (monitoring of heat prodn. by, in human adipocytes and yeast; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT **Alopecia**
 (monitoring of, in rats; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT **Evaporation**
Freezing
Melting
Sublimation
 (monitoring of, of compd. or compn.; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT **Analysis**
 (of ability of test agent to cause thermodyn. change; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT - **Molecular association**
 (of ligand and receptor, monitoring of; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT **Molecular cloning**
 (of uncoupling protein UCP2 and transformation of yeast; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT **Genetic engineering**
 (screening test agent for ability to cause thermodyn. change in sample contg. cells from; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT **Animal tissue culture**
Eukaryote (Eukaryotae)
Neoplasm
Plant tissue culture
 (screening test agent for ability to cause thermodyn. change in sample contg. cells of; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT **Ligands**
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (screening test agent for ability to cause thermodyn. change in sample contg. receptor and; IR thermog. for measuring real-time

- thermogenesis in organisms and cells)
- IT Cell
 - Fungi
 - Plant cell
 - (screening test agent for ability to cause thermodyn. change in sample contg.; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Carbohydrates, processes
 - Enzymes, processes
 - Inorganic compounds
 - Lipids, processes
 - Nucleic acids
 - Organic compounds, processes
 - Proteins, general, processes
 - Receptors
- RL: PEP (Physical, engineering or chemical process); PROC (Process)
 - (screening test agent for ability to cause thermodyn. change in sample contg.; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Physical properties
 - (state, monitoring of, of compd. or compn.; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Imaging
 - (thermal; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Arthritis
 - (thermogenesis in; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Diet
 - (thermogenesis induced by, in humans; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Antidiabetic agents
 - Diabetes mellitus
 - (thermogenic effect of GW1929x on ob/ob mice in relation to; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Antiobesity agents
 - Obesity
 - (thermogenic effect of compds. on AKR mice in relation to; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Antibodies
 - RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation); PROC (Process)
 - (to synthetic uncoupling protein UCP2 peptide, prepn. of; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT Glycerides, biological studies
 - RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
 - (troglitazone and related agonists effect on accumulation of, in adipocytes; IR thermog. for measuring real-time thermogenesis in

- organisms and cells)**
- IT Yeast
(uncoupling **protein UCP2** cloning and expression in and
IR thermog. of; IR thermog. for
measuring real-time thermogenesis in
organisms and cells)
- IT Adrenoceptors
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified);
BIOL (Biological study); PREP (Preparation)
(.beta.3, expression of, of human, in CHO cells,
isoproterenol thermal effect in relation to; **IR**
thermog. for measuring real-time
thermogenesis in organisms and cells)
- IT Peroxisome proliferator-activated **receptors**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
(Biological study); PROC (Process)
(.gamma., agonists, effect of, in **adipocytes** and mice;
IR thermog. for measuring real-time
thermogenesis in organisms and cells)
- IT 127464-60-2, Vascular endothelial growth factor
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); BIOL (Biological study)
(HUVEC cells and nude mice treated with,
thermogenesis in; IR thermog. for
measuring real-time thermogenesis in
organisms and cells)
- IT 250776-65-9P
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU
(Biological study, unclassified); PRP (Properties); SPN (Synthetic
preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(as synthetic uncoupling **protein UCP2** peptide, antibodies
prepn. to; **IR thermog. for measuring**
real-time thermogenesis in organisms and
cells)
- IT 64208-32-8, CGP 12177A
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); BIOL (Biological study)
(db/db mice **response** to GW1929 and; **IR**
thermog. for measuring real-time
thermogenesis in organisms and cells)
- IT 196808-24-9, GW1929
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); BIOL (Biological study)
(effect of, in **adipocytes** and in db/db mice treated with
CGP12177A; **IR thermog. for measuring**
real-time thermogenesis in organisms and
cells)
- IT 18559-94-9, Albuterol
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); BIOL (Biological study)
(effect of, in **adipocytes** and mouse; **IR**
thermog. for measuring real-time
thermogenesis in organisms and cells)
- IT 74513-77-2, R0363 74772-77-3, Ciglitazone 97322-87-7, Troglitazone
109229-58-5, Englitazone 111025-46-8, Pioglitazone 122320-73-4,
BRL49653 138908-40-4, CL316243
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); BIOL (Biological study)
(effect of, in **adipocytes**; **IR thermog.**
for measuring real-time thermogenesis in

- organisms and cells)**
- IT 83-79-4, Rotenone 370-86-5, Carbonyl cyanide p-(trifluoromethoxy)phenylhydrazone
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 (human adipocytes and yeast treatment with; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT 90730-96-4, BRL37344
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 (intrascapular thermogenesis and wt. redn. in AKR mice treated with; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT 251089-43-7, GW 473559A
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 (ob/ob mouse treatment with, thermal effect of; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT 50-24-8, Prednisolone
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (redn. in thermogenesis in arthritis treated with; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT 7683-59-2, Isoproterenol 66575-29-9, Forskolin
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 (thermal effect of, in CHO cells overexpressing human .beta.3 adrenergic receptor; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT 33419-42-0, Etoposide
 RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
 (thermal monitoring of hair loss from, in rat pups; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT 1310-73-2, Sodium hydroxide, reactions
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (thermogenic response of, with hydrochloric acid; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT 7647-01-0, Hydrochloric acid, reactions
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (thermogenic response of, with sodium hydroxide; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT 60560-33-0, Pinacidil
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 (thermogenic response to, in genitalia of rats; IR thermog. for measuring real-time thermogenesis in organisms and cells)
- IT 299-42-3, Ephedrine
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological

study, unclassified); BIOL (Biological study)
 (thermogenic response to, in humans; IR
 thermog. for measuring real-time
 thermogenesis in organisms and cells)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 12 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:391650 HCAPLUS

DOCUMENT NUMBER: 129:117364

TITLE: Development of infrared imaging to
 measure thermogenesis in
 cell culture: thermogenic effects of
 uncoupling protein-2, troglitazone, and
 .beta.-adrenoceptor agonists

AUTHOR(S): Paulik, Mark A.; Buckholz, Richard G.; Lancaster, Mary
 E.; Dallas, Walter S.; Hull-Ryde, Emily A.; Weiel,
 James E.; Lenhard, James M.

CORPORATE SOURCE: Department of Metabolic Diseases, GlaxoWellcome Inc.
 Research Triangle Park, NC, 27709, USA

SOURCE: Pharmaceutical Research (1998), 15(6), 944-949
 CODEN: PHREEB; ISSN: 0724-8741

PUBLISHER: Plenum Publishing Corp.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Although the effects of thermogenic agents in cell culture can be measured
 by direct microcalorimetry, only a few samples can be analyzed over
 several hours. In this report, we describe a robust non-invasive
 technique to measure real-time thermogenesis of cells cultured in
 microtiter plates using IR thermog. Yeast were transformed with
 uncoupling protein-2 (UCP2) or exposed to carbonyl cyanide
 p-(trifluoromethoxy)phenylhydrazine (FCCP) or rotenone. Adipocytes were
 exposed to rotenone, FCCP, cycloheximide, troglitazone, or CL316243.
 Thermogenesis was measured using IR thermog. Thermogenesis increased
 after exposing yeast to the mitochondrial uncoupler, FCCP, or transforming
 the cells with UCP2. Further, thermogenesis in adipocytes was stimulated
 by CL316243, a .beta.3-adrenoceptor agonist being developed to treat
 obesity. The protein synthesis inhibitor, cycloheximide, did not inhibit
 CL316243-mediated thermogenesis. In contrast, the mitochondrial proton
 transport inhibitor, rotenone, inhibited thermogenesis in yeast and
 adipocytes. Similarly, the antidiabetic agent, troglitazone, suppressed
 thermogenesis in adipocytes. Although increased UCP synthesis resulted in
 increased thermogenesis in yeast, UCP expression did not correlated with
 thermogenesis in adipocytes. The results, taken together with the high
 resoln. (0.002.degree.C) and robustness (384-well format) of the approach,
 indicate IR-imaging is a rapid and effective method for measuring
 thermogenesis in vitro.

CC 1-1 (Pharmacology)
 Section cross-reference(s): 9

ST thermogenesis IR imaging; beta adrenoceptor
 agonist thermogenesis IR imaging

IT Uncoupling protein
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological
 study, unclassified); BIOL (Biological study)
 (2; thermogenic effects of uncoupling protein-2,
 troglitazone, and .beta.-adrenoceptor agonists in IR
 imaging to measure thermogenesis in
 cell culture)

IT Imaging
 (IR; thermogenic effects of uncoupling

- protein-2, troglitazone, and .beta.-adrenoceptor agonists in IR imaging to measure thermogenesis in cell culture)
- IT Thermogenesis, biological
(thermogenic effects of uncoupling protein-2, troglitazone, and .beta.-adrenoceptor agonists in IR imaging to measure thermogenesis in cell culture)
- IT Adrenoceptor agonists
(.beta.-; thermogenic effects of uncoupling protein-2, troglitazone, and .beta.-adrenoceptor agonists in IR imaging to measure thermogenesis in cell culture)
- IT 83-79-4, Rotenone 370-86-5, FCCP
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(thermogenic effects of uncoupling protein-2, troglitazone, and .beta.-adrenoceptor agonists in IR imaging to measure thermogenesis in cell culture)
- IT 66-81-9, Cycloheximide 97322-87-7, Troglitazone 138908-40-4, CL316243
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(thermogenic effects of uncoupling protein-2, troglitazone, and .beta.-adrenoceptor agonists in IR imaging to measure thermogenesis in cell culture)

L26 ANSWER 13 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:383152 HCAPLUS

DOCUMENT NUMBER: 129:68787

TITLE: Mechanism and kinetics of stabilization reactions of polyacrylonitrile and related copolymers. IV. Effects of atmosphere on isothermal DSC thermograms and FT-IR spectral changes during stabilization reaction of acrylonitrile/methacrylic acid copolymer

AUTHOR(S): Kakida, Hideto; Tashiro, Kohji

CORPORATE SOURCE: Central Technology Research Laboratories, Mitsubishi Rayon Co., Ltd., Hiroshima, 739-0693, Japan

SOURCE: Polymer Journal (Tokyo) (1998), 30(6), 463-469
CODEN: POLJB8; ISSN: 0032-3896

PUBLISHER: Society of Polymer Science, Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Structure formation during the stabilization reactions of the acrylonitrile/methacrylic acid (AN/MAA) copolymer under air, O, and N was studied by an organized combination of isothermal DSC thermograms and FT-IR spectra. Under the oxidative atm. evolved heat was very large and the conjugated cyclic structure was formed as a stable structure. Particularly in pure O gas the stabilization reaction attained to the most advanced state. Under N the evolved heat was smallest and the resulted structure was thought to be a non-conjugated cyclic imine-enamine tautomerism structure.

CC 40-3 (Textiles and Fibers)

IT Acrylic fibers, properties

Acrylic fibers, properties

Synthetic polymeric fibers, properties

Synthetic polymeric fibers, properties

RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

- (acrylonitrile-methacrylic acid; atmosphere in relation to isothermal DSC **thermograms** and FT-IR spectral **changes** during stabilization reaction of acrylonitrile/methacrylic acid)
- IT Differential scanning calorimetry
IR spectra
Polymer morphology
(atmosphere in relation to isothermal DSC **thermograms** and FT-IR spectral **changes** during stabilization reaction of acrylonitrile/methacrylic acid)
- IT Carbon fibers, preparation
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(precursors; atmosphere in relation to isothermal DSC **thermograms** and FT-IR spectral **changes** during stabilization reaction of acrylonitrile/methacrylic acid)
- IT 25749-57-9, Acrylonitrile-methacrylic acid copolymer
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(fibers; atmosphere in relation to isothermal DSC **thermograms** and FT-IR spectral **changes** during stabilization reaction of acrylonitrile/methacrylic acid)

L26 ANSWER 14 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:221652 HCAPLUS

DOCUMENT NUMBER: 128:318968

TITLE: Near-IR and IR imaging in lipid metabolism and obesity

AUTHOR(S): Buice, Robert G., Jr.; Cassis, Lisa A.; Lodder, Robert A.

CORPORATE SOURCE: College Pharmacy, University Kentucky Medical Center, Lexington, KY, 40536, USA

SOURCE: Cellular and Molecular Biology (Paris) (1998), 44(1), 53-64

CODEN: CMOBEF; ISSN: 0145-5680

PUBLISHER: C.M.B. Association

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Approx. 1/3 of Americans are classified as obese. There has long been an interest in drug therapies for obesity. Interest in obesity research and in drug interventions in obesity has greatly increased since the discovery of a protein named leptin, one of apparently many competing biol. signals in energy metab. The complexity of the obesity problem demands new non-invasive and nondestructive methods for monitoring lipid metab. and energy expenditure to study the competing biol. signals and their effects. A new computer algorithm for spectrometric imaging of living subjects is used to remove artifacts arising from subject motion from spectra and images. The algorithm is sufficiently simple to be implemented easily in hardware for real-time video processing. Because the algorithm can be applied to images, thermogenesis and lipid metab. in interscapular adipose tissue can be obsd. directly in unrestrained and unanesthetized subjects using an InSb focal plane array video camera. The accuracy and precision of temp. and spectral measurements are established using lab. refs. and prototype drugs in test subjects.

CC 9-5 (Biochemical Methods)

IT Adipose tissue

Thermogenesis, biological

(direct observation of **thermogenesis** and lipid metab. in interscapular adipose tissue in unrestrained and unanesthetized subjects using **IR imaging**)

IT Lipids, biological studies

RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological

study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)

(metab.; direct observation of **thermogenesis** and lipid metab. in interscapular adipose tissue in unrestrained and unanesthetized subjects using **IR imaging**)

L26 ANSWER 15 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:190906 HCAPLUS

DOCUMENT NUMBER: 128:305800

TITLE: **Thermal imaging of receptor-activated heat production in single cells**

AUTHOR(S): Zohar, Ofer; Ikeda, Masayaki; Shinagawa, Hiroyuki; Inoue, Hiroko; Nakamura, Hiroshi; Elbaum, Danek; Alkon, Daniel L.; Yoshioka, Tohru

CORPORATE SOURCE: Laboratory of Adaptive Systems, National Institute of Neurological Disorders and Stroke, Bethesda, MD, 20892-4124, USA

SOURCE: Biophysical Journal (1998), 74(1), 82-89

CODEN: BIOJAU; ISSN: 0006-3495

PUBLISHER: Biophysical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We present a novel thermal imaging method that combines both diffraction-limited spatial (.apprx.300 nm) and sampling-rate-limited time resoln., using the temp.-dependent phosphorescence intensity of the rare earth chelate Eu-TTA (europium (III) thenoyltrifluoro-acetate). With this thermosensitive dye, we imaged intracellular heat waves evoked in Chinese hamster ovary cells after activation of the metabotropic m1-muscarinic receptor. Fast application of acetylcholine onto the cells evoked a biphasic heat wave that was blocked by atropine, and after a brief delay was followed by a calcium wave. Atropine applied by itself produced a monophasic heat wave in the cells, suggesting that its interactions with the receptor activate some intracellular metabolic pathways. The thermal imaging technique introduced here should provide new insights into cellular functions by resolving the location, kinetics, and quantity of intracellular heat prodn.

CC 9-4 (Biochemical Methods)

Section cross-reference(s): 6

ST **cell thermal imaging heat sensitive dye; heat prodn cell europium thenoyltrifluoro acetate**

IT Animal **cell line**
(CHO; **thermal imaging of receptor-activated heat prodn. in single cells**)

IT Stains, biological
(fluorescent, **heat sensitive; thermal imaging of receptor-activated heat prodn. in single cells**)

IT Staining, biological
(fluorescent; **thermal imaging of receptor-activated heat prodn. in single cells**)

IT Dyes
(**heat sensitive; thermal imaging of receptor-activated heat prodn. in single cells**)

IT Temperature effects, biological
(**heat; thermal imaging of receptor-activated heat prodn. in single cells**)

- IT Fluorometry
Imaging
 (thermal imaging of receptor-activated
 heat prodn. in single cells)
- IT Muscarinic receptors
Receptors
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological
 study, unclassified); BIOL (Biological study)
 (thermal imaging of receptor-activated
 heat prodn. in single cells)
- IT 7440-70-2, Calcium, biological studies
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
 (Biological study); PROC (Process)
 (intracellular; **thermal imaging of receptor**
 -activated heat prodn. in single cells)
- IT 14054-87-6
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (thermal imaging of receptor-activated
 heat prodn. in single cells)
- IT 51-55-8, Atropine, biological studies 51-84-3, Acetylcholine, biological
 studies
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological
 study, unclassified); BIOL (Biological study)
 (thermal imaging of receptor-activated
 heat prodn. in single cells)

L26 ANSWER 16 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:285781 HCAPLUS

DOCUMENT NUMBER: 126:330918

TITLE: Mechanism and kinetics of stabilization reaction of
 polyacrylonitrile and related copolymers. II.
 Relationships between isothermal DSC
thermograms and FT-IR spectral
changes of polyacrylonitrile in comparison
 with the case of acrylonitrile/methacrylic acid -
 copolymer

AUTHOR(S): Kakida, Hideto; Tashiro, Kohji

CORPORATE SOURCE: Central Technology Research Laboratories, Mitsubishi
 Rayon Co., Ltd., Hiroshima, 739-06, Japan

SOURCE: Polym. J. (Tokyo) (1997), 29(4), 353-357

CODEN: POLJB8; ISSN: 0032-3896

PUBLISHER: Society of Polymer Science, Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The relationship between thermal behavior and structural change was
 studied by an organized combination of isothermal DSC thermograms and FTIR
 spectra measured for the stabilization reaction of polyacrylonitrile (PAN)
 in comparison with the case of acrylonitrile/methacrylic acid (AN/MAA)
 copolymer. The isothermal DSC exothermic thermogram of PAN is much
 broader and the structural changes proceed much more slowly than the case
 of AN/MAA copolymer. On the stabilization of PAN, at first, some nitrile
 groups change into amide groups, which initiate the dehydrogenation and
 cyclization reactions. This dehydrogenation reaction proceeds rather
 faster than the cyclization. The comonomer MAA was considered to
 accelerate the dehydrogenation reaction more effectively than the
 cyclization reaction.

CC 35-8 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 40

L26 ANSWER 17 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:148205 HCAPLUS
 DOCUMENT NUMBER: 126:179105
 TITLE: Heat-mode **thermal-transfer image receptor**
 INVENTOR(S): Maejima, Katsumi; Toshima, Shizuka; Takeda, Katsuyuki
 PATENT ASSIGNEE(S): Konishiroku Photo Ind, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 09001951	A2	19970107	JP 1995-178046	19950621
AB	The light-heat conversion-type receptor comprises a support with elastic modulus .ltoreq. 100 kg/mm ² and an image-receiving layer formed thereon. The support may be made of a material selected from 1,2-polybutadiene, polyurethane, soft poly(vinyl chloride), undrawn polypropylene, low d. polyester, and undrawn nylon. The support has a thickness .ltoreq.25 .mu.m. The receptor has a releasable support which is formed on the back side of the support through an intermediate layer during a conveying/exposure process and is released followed by transferring the image to a permanent support in a transferring process. The image formed on the image-receiving layer of the material can be transferred onto permanent supports and the material gives high resolu. images useful for color proofs. Thus, a soft poly(vinyl chloride) film was coated with a compn. contg. poly(vinyl acetal) resin and poly(Me methacrylate) particles to give a receptor sheet.				
IC	ICM B41M005-40				
	ICS B41M005-26; G03F003-10; G03F007-004; G03F007-105; G03F007-11				
CC	74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)				
	Section cross-reference(s): 38 -				
ST	heat mode thermal transfer printing receptor ; support elastic modulus thermal transfer receptor				
IT	Optical filters				
	(heat-mode-melting thermal-transfer printing receptor useful in prodn. of color proofs)				
IT	Thermal-transfer printing				
	(receptors; heat-mode-melting thermal-transfer printing receptor useful in prodn. of color proofs)				
IT	Polyamides, uses				
	Polyurethanes, uses				
	RL: DEV (Device component use); USES (Uses)				
	(support; heat-mode-melting thermal-transfer printing receptor useful in prodn. of color proofs)				
IT	107194-54-7, Ethylene-vinyl acetate-vinyl chloride graft copolymer				
	RL: DEV (Device component use); USES (Uses)				
	(heat-mode-melting thermal-transfer printing receptor useful in prodn. of color proofs)				
IT	9002-86-2, Poly(vinyl chloride) 9002-88-4, Polyethylene 9003-07-0, Polypropylene 25038-59-9, Poly(ethylene terephthalate), uses 26160-98-5, 1,2-Polybutadiene				
	RL: DEV (Device component use); USES (Uses)				
	(support; heat-mode-melting thermal-transfer printing receptor useful in prodn. of color proofs)				

ACCESSION NUMBER: 1996:52483 HCAPLUS
 DOCUMENT NUMBER: 124:88085
 TITLE: Mechanism and kinetics of stabilization reaction of polyacrylonitrile and related copolymers. I. Relationship between isothermal DSC **thermogram** and FT/IR spectral **change** of an acrylonitrile/methacrylic acid copolymer
 AUTHOR(S): Kakida, Hideto; Tashiro, Kohji; Kobayashi, Masamichi
 CORPORATE SOURCE: Central Res. Lab., Mitsubishi Rayon Co., Ltd, Hiroshima, 739-06, Japan
 SOURCE: Polym. J. (Tokyo) (1996), 28(1), 30-4
 CODEN: POLJB8; ISSN: 0032-3896
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The relationship between thermal behavior and structural change was clarified for the first time by an organized combination of isothermal DSC thermogram and FTIR spectra measured for the stabilization reaction of an acrylonitrile-methacrylic acid (I) copolymer. In an early stage of the isothermal exothermic thermogram measured by DSC under air, a flat region or the induction period of the cyclic structure formation was found to exist, which is immediately followed by the two stages of steep heat evolution and the slow heat release. Based on the IR spectral changes obsd. during this thermal reaction, the induction stage was found to be assocd. with the reaction of I groups with the adjacent nitrile groups and the steep heat evolution region with the propagation of the cyclic structure and dehydrogenation of the polyacrylonitrile (PAN) chain sequences to give an unsatd. ladder structure. An activation energy for this initiation reaction of the cyclic structure formation was evaluated to be .apprx.26 kcal/mol by an Arrhenius plot.

CC 35-8 (Chemistry of Synthetic High Polymers)

IT Carbon fibers, miscellaneous

RL: MSC (Miscellaneous)

(mechanism and kinetics of stabilization of acrylonitrile-methacrylic acid copolymer using relationship between isothermal DSC **thermogram** and FTIR spectral **changes**)

IT **Infrared** spectrometry

(Fourier-transform, mechanism and kinetics of stabilization of acrylonitrile-methacrylic acid copolymer using relationship between isothermal DSC **thermogram** and FTIR spectral **changes**)

IT Calorimetry

(differential scanning, mechanism and kinetics of stabilization of acrylonitrile-methacrylic acid copolymer using relationship between isothermal DSC **thermogram** and FTIR spectral **changes**)

IT 25749-57-9, Acrylonitrile-methacrylic acid copolymer

RL: PEP (Physical, engineering or chemical process); PROC (Process)

(mechanism and kinetics of stabilization of acrylonitrile-methacrylic acid copolymer using relationship between isothermal DSC **thermogram** and FTIR spectral **changes**)

L26 ANSWER 19 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:899451 HCAPLUS

DOCUMENT NUMBER: 123:322055

TITLE: **Thermographic** measurement of temperature **change** during resin composite polymerization in vivo

AUTHOR(S): Hussey, D. L.; Biagioni, P. A.; Lamey, P. -J.

CORPORATE SOURCE: School Clinical Dentistry, Queen's University Belfast, Belfast, BT12 6BP, UK

SOURCE: J. Dent. (1995), 23(5), 267-75
CODEN: JDENAB; ISSN: 0300-5712

DOCUMENT TYPE: Journal
LANGUAGE: English

AB An IR thermog. technique was used for non-invasive monitoring of temp. changes during polymn. of resin composite by measuring the infra-red emission from the surfaces of resin composite restorations during photocuring. In this study 10 patient volunteers had resin composite restorations placed in upper incisor teeth and during photocuring the temp. rise within the composite was measured using the Thermovision 900 infra-red scanning system. The results demonstrate that the exotherm is almost instantaneous, occurring as soon as the light source is activated and rising to a peak at approx. 30 s before leveling off. The measurements suggest that a max. temp. increase of 12.degree. could occur, although this may only be for a short period (<15 s). The range of temp. rise measured in this study (mean 5.4.degree. +/- 2.5.degree.) would suggest that the pulp may be endangered by the temp. rise which occurs during resin composite polymn. in vivo.

CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 38

IT Light
(IR thermog. measurement of temp. change
during in vivo photochem. polymn. of dental composites)

IT Thermographic copying
(IR, IR thermog. measurement of temp.
change during in vivo photochem. polymn. of dental composites)

IT Dental materials and appliances
(composites, IR thermog. measurement of temp.
change during in vivo photochem. polymn. of dental composites)

IT Crosslinking
Polymerization
(photochem., IR thermog. measurement of temp.
change during in vivo photochem. polymn. of dental composites)

IT 150104-65-7, Vitrebond 153700-24-4, Herculite XRV
RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(IR thermog. measurement of temp. change
during in vivo photochem. polymn. of dental composites)

L26 ANSWER 20 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:318805 HCAPLUS

DOCUMENT NUMBER: 122:150256

TITLE: Factors affecting the spectral response in a TG/FT-IR experiment

AUTHOR(S): Marini, A.; Berbenni, V.; Capsoni, D.; Riccardi, R.; Zerlia, T.

CORPORATE SOURCE: Dipartimento di Chimica Fisica, Universita di Pavia, Pavia, 27100, Italy

SOURCE: Appl. Spectrosc. (1994), 48(12), 1468-71
CODEN: APSPA4; ISSN: 0003-7028

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors discuss situations where thermogravimetric/FTIR (TG/FTIR) plots are obtained which differ substantially from the expected ones. The most common of these situations involves samples that release atm. components (H₂O, CO₂) at low temps. The phenomena are mainly related to the purging action of the carrier gas, which strongly influences the spectroscopic portion of the TG/FTIR plot. Such an influence, as well as the different situations originating from it, it is discussed and

explained from an analogy with the operational mode of a conventional dispersive spectrometer.

CC 79-1 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 73
 ST TG FTIR spectral **response**; thermogravimetry FTIR
 spectral **response**; IR Fourier TG spectral
response
 IT Thermogravimetric analysis
 (factors affecting spectral **response** in a TG/FT-IR
 expt.)

L26 ANSWER 21 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:246571 HCAPLUS

DOCUMENT NUMBER: 122:20627

TITLE: Composite recording medium capable of having both
 transferred printing **image** and
 thermal recording **image**

INVENTOR(S): Danjo, Kotaro; Shimada, Naoki

PATENT ASSIGNEE(S): Dainippon Printing Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 06135145	A2	19940517	JP 1992-312949	19921028
AB	The title recording medium has on its sheet substrate a thermal recording layer and a transparent transferred ink receiving layer, wherein the recording on the thermal recording layer is effected by changing the recording layer between transparent and opaque states. Manuf. of the composite recording medium is also claimed.				
IC	ICM B41M005-26				
	ICS B41M005-36				
CC	74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)				
IT	Thermographic copying (by changing transparency of thermal recording layer on composite recording medium)				
IT	Recording materials (composite recording medium capable of having both transferred printing image and thermal recording image)				

L26 ANSWER 22 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:422612 HCAPLUS

DOCUMENT NUMBER: 121:22612

TITLE: Sublimation-type thermal-transfer **receptor**
 sheets

INVENTOR(S): Kamimura, Hiroyuki; Mochizuki, Hidehiro; Ariga, Yutaka

PATENT ASSIGNEE(S): Ricoh Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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 JP 06024155 A2 19940201 JP 1992-182332 19920709
 JP 3137747 B2 20010226

- AB The receptor sheets comprise a substrate coated with a receptor layer
 contg. a dyeing resin made of a hardened product of active H-contg. resins
 and isocyanates, a heat-releasable resin, and a lubricant which is
 unreactive with isocyanates. The sheets prevent melt-adhesion to transfer
 sheets, trouble in feeding, and wrinkling in n-mode recording process and
 provide high-d. transferred images.
- IC ICM B41M005-38
- CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
- ST sublimation **thermal transfer receptor sheet**;
image receiving layer receptor sheet; dyeing resin
receptor sheet; isocyanate hardened **product**
receptor sheet; **heat releasable resin receptor**
 sheet; lubricant **thermal transfer receptor sheet**
- IT Polyesters, uses
 Urethane polymers, uses
 RL: USES (Uses)
 (thermal-transfer sheet image-receiving layer
 contg.)
- IT Printing, nonimpact
 (thermal-transfer, sheets, sublimation, receptor
 sheets, with lubricant-contg. image-receiving layer)
- IT 127579-53-7, Coronate L-VAGH copolymer
 RL: USES (Uses)
 (thermal-transfer sheet image-receiving layer
 contg.)

L26 ANSWER 23 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:440316 HCAPLUS

DOCUMENT NUMBER: 117:40316

TITLE: Effects of isoflurane on myocardial ischemic area. A
 thermographic study

AUTHOR(S): Ishikawa, Takehiko

CORPORATE SOURCE: Sch. Med., Hokkaido Univ., Sapporo, 060, Japan

SOURCE: Junkan Seigyo (1992), 13(1), 113-24

CODEN: JUSEE7; ISSN: 0389-1844

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

- AB It is still controversial if isoflurane produces a coronary steal and
 deteriorates acute myocardial ischemia. The author evaluated the effects
 of isoflurane on myocardial ischemia in an exptl. model of acute
 myocardial ischemia (AMI), using a thermog. imaging system. Twenty-five
 mongrel dogs were anesthetized with isoflurane. A left thoracotomy was
 performed and a small branch of the left coronary artery (LAD) was
 dissected free from the surrounding tissue. AMI was produced by clamping
 the exposed section of LAD. Thermal images of myocardium were recorded at
 a rate of 30 images per s. Each image was analyzed on an engineering work
 station, and a colder spot of the myocardium resulting from clamping was
 defined as a Thermog. Detd. Myocardial Ischemic Area (TDMIA). After the
 surgical prepn., the size of TDMIA at 1 MAC isoflurane served as control
 (100%). Then, changes of TDMIA, myocardial pH and hemodynamic variables
 at 0.5, 1.0, 1.5, 2.0 and 2.5 MAC of isoflurane were evaluated. After the
 expt. histopathol. changes of ischemic myocardium around TDMIA were also
 examd. Well-defined TDMIA were obtained in all dogs after LAD clamping.
 TDMIA decreased to 66.7% of the control value by 0.5 MAC isoflurane,
 whereas it increased to 219% of the control value by 2.0 MAC isoflurane.
 I.v. phenylephrine administration (2 .mu.g/kg) at 2.0 MAC isoflurane

increased arterial blood pressure and shrank TDMIA to the control level. Myocardial pH at the center of TDMIA decreased from 7.10 to 6.87 after LAD clamping and remained unchanged throughout the study, whereas myocardial pH at the limb of TDMIA changed according to the size of TDMIA. Histopathol. findings revealed a transmural degeneration of cells which was coincident with TDMIA's. TDMIA anal. can demonstrate real-time changes of AMI in beating heart quant. and continuously. The results indicate that isoflurane may deteriorate AMI dose-dependently unless hemodynamics are maintained.

CC 1-11 (Pharmacology)
Section cross-reference(s): 9

IT **Imaging**
(**thermog.**, of myocardial ischemic area **response** to isoflurane)

IT 26675-46-7, Isoflurane
RL: BIOL (Biological study)
(myocardial ischemic area **response** to, **thermog.** anal. of)

L26 ANSWER 24 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:100816 HCAPLUS

DOCUMENT NUMBER: 116:100816

TITLE: Use of **infrared thermography** for assessment of stomatal **response** to ozone exposure

AUTHOR(S): Estock, Mark D.; McCool, Patrick M.; Younglove, Ted

CORPORATE SOURCE: Univ. California, Riverside, CA, USA

SOURCE: Proc., Annu. Meet. - Air Waste Manage. Assoc. (1991), 84th (Vol. 15B), Paper 91/142.6, 15 pp.
CODEN: PAMEE5; ISSN: 1052-6102

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The objective of this study was to combine IR thermal imaging data with time series anal. to provide a predictive model of stomatal behavior during pollution exposure of leaves to various ozone concns. There was a strong cross correlation between the filter paper ref. temp. and the leaf temp. The leaves exposed to low ozone did not appear to react to ozone. An increase in ozone fumigation dose resulted in a measurable response. At the highest ozone treatment, the leaves showed initial cooling at the beginning, but then increased in temp. through the end of the observation period.

CC 4-3 (Toxicology)
Section cross-reference(s): 11, 59

ST ozone stomata **IR thermog**

IT **Thermographic** copying
(**IR**, for ozone effect on stomata assessment)

IT Leaf
(stoma, ozone effect on, assessment of, **IR thermog.** for)

IT 10028-15-6, Ozone, biological studies
RL: BIOL (Biological study)
(stomata **response** to, assessment of, **IR thermog.** for)

L26 ANSWER 25 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:95548 HCAPLUS

DOCUMENT NUMBER: 116:95548

TITLE: Dynamic active microwave thermography applied to hyperthermia monitoring

AUTHOR(S): Martin, J.; Broquetas, A.; Jofre, L.

CORPORATE SOURCE: Dep. Teor. Senyai Commun., ETS Eng. Telecommun.,
Barcelona, 08080, Spain
SOURCE: J. Photogr. Sci. (1991), 39(4), 146-8
CODEN: JPTSAF; ISSN: 0022-3638

DOCUMENT TYPE: Journal
LANGUAGE: English

AB A numerical simulation is presented of the active tomog. imaging of temp. changes induced in human pelvis and thorax during hyperthermia treatments of cancer. Thermal images allow monitoring and optimization of treatment, increasing its efficacy and avoiding the heating of healthy tissues. The fields scattered by a numerical ref. phantom and the same model locally heated were calcd. at 434 MHz. From this data, differential images were reconstructed with a first order algorithm showing approx. the heated region.

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 8

ST microwave **thermog imaging** hyperthermia cancer treatment; numerical simulation tomog **imaging** hyperthermia treatment

IT **Imaging**
(**thermog.**, of temp. **changes** induced in human pelvis and thorax during hypothermia treatments of cancer)

L26 ANSWER 26 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1991:196442 HCAPLUS

DOCUMENT NUMBER: 114:196442

TITLE: Rewritable recording medium

INVENTOR(S): Teramura, Kaoru; Kojima, Akio; Yamaguchi, Takeo

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

-FAMILY-ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02263686	A2	19901026	JP 1989-84879	19890405
JP 3027584	B2	20000404		

AB In a recording media having a layer mainly contg. F-contg. cryst. polymers that reversibly change their crystallinity by temp. change, the polymers are poly(vinylidene fluoride), copolymers of vinylidene fluoride with trifluoroethylene, that with tetrafluoroethylene, that with hexafluoro propylene, and that with tetrafluoroethylene and hexafluoropropylene. These polymers provide large differences in light transmission in the cryst. state, fast response, and low phase-change temp. These polymers are solvent sol. and easily coatable. Thus, a material with a glass substrate and a 5-.mu.m-thick layer of 53:47 vinylidene fluoride-trifluoroethylene copolymer (m.p. 147.degree.) was made transparent by heating to 160.degree. and rapidly cooled in water to retain its transparency. Reheating to 160.degree. and slow cooling brought about opalescence; these states showed difference in crystallinity

IC ICM B41M005-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

IT **Imaging**

(**thermog.**, materials for, utilizing **change** of light transmission by phase **change** of cryst. fluoropolymers, vinylidene fluoride polymers for)

L26 ANSWER 27 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1989:622231 HCAPLUS

DOCUMENT NUMBER: 111:222231

TITLE: Transfer type heat-sensitive receptor materials with a receptor medium made of a vinyl polymer having a nucleic base in its side chains

INVENTOR(S): Enmanji, Kimie; Ando, Torahiko

PATENT ASSIGNEE(S): Mitsubishi Electric Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 01108093	A2	19890425	JP 1987-267160	19871021
AB	In a transfer type heat-sensitive receptor material having a receptor medium adhered on a substrate, with which a thermal transfer recording material having a transfer layer in which a dye is dispersed is heated to transfer the dye onto the medium, the medium is made of a vinyl polymer having a nucleic base or its deriv. in its side chains. The receptor material provides high quality images with good lightfastness and thermal resistance. Thus, methacrylic acid was polymd. in the presence of caffeine and Ce(NO ₃) ₄ and the resulting polymer was coated on a paper support to give a receptor paper, while a compn. contg. SOT-Blue 2 (anthraquinone type dye), surfactant, and poly(vinyl alc.) was coated on a PET film to obtain a transfer sheet. A thermal transfer recording set using the paper and sheet gave high quality blue images.				
IC	ICM B41M005-26				
CC	74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)				
IT	Nucleic acid bases				
	RL: USES (Uses)				
	(vinyl polymer terminated with, in thermal-transfer printer receptors, for high quality images with light fastness and thermal resistance)				
IT	Printing, nonimpact				
	(thermal-transfer, receptors, contg. nucleic base side chain-contg. vinyl polymers, for high quality images with good light fastness and thermal resistance)				
IT	146-17-8D, Flavin mononucleotide, terminal group, in poly(Me methacrylate) 9003-42-3D, Poly(ethyl methacrylate), adenosine-5'-monophosphate terminal-contg. 9011-14-7D, Poly(methyl methacrylate), nucleic base terminal-contg.				
	RL: USES (Uses)				
	(thermal-transfer printing receptor contg., for high quality images with good light fastness and thermal resistance)				
IT	58-08-2D, Caffeine, reaction products with poly(Me methacrylate) terminal functionality 61-19-8D, Adenosine-5'-monophosphate, reaction products with poly(Me methacrylate) terminal functionality				
	RL: USES (Uses)				
	(thermal-transfer printing receptor contg., for high-quality images with good lightfastness and thermal				

resistance)

L26 ANSWER 28 OF 35 HCAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 1989:564294 HCAPLUS
 DOCUMENT NUMBER: 111:164294
 TITLE: Reversible **imaging** method using
 transparency-**changeable**
thermographic material
 INVENTOR(S): Hotta, Yoshihiko; Kubo, Takashi
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 01014078	A2	19890118	JP 1987-171628	19870708
AB	In the title thermog. material comprising mainly a transparent binder resin, a low-mol.-wt. org. substance, and a substance controlling the crystal growth of the low-mol.-wt. substance, images are formed in the thermog. material by heating at one temp. and erased by heating at another temp.				
IC	ICM B41M005-18 ICS B41M005-18				
CC	74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)				
ST	transparency reversible thermog copying material; projection slide reversible thermog imaging				
IT	Thermographic copying (transparency-reversible, materials for, contg. transparency- changeable org. substances)				
IT	57-11-4, Octadecanoic acid, uses and miscellaneous 84-74-2 103-23-1 105-99-7 112-72-1, Myristyl alcohol 112-85-6, Docosanoic acid 126-73-8, Phosphoric acid tributyl ester, uses and miscellaneous 661-19-8, Docosanol 2778-96-3, Stearyl stearate 14117-96-5 22413-03-2 31566-31-1, Glycerol monostearate 42233-07-8 54392-26-6, Sorbitan monoisostearate 103018-67-3D, Maleic anhydride, polymers with olefin acid RL: USES (Uses) (reversible thermog. material contg., for transparency-reversible imaging , for projection slides)				
IT	9003-22-9, Vinyl acetate-vinyl chloride copolymer RL: USES (Uses) (transparency reversible thermog. imaging with thermog materials contg.)				

L26 ANSWER 29 OF 35 HCAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 1986:433046 HCAPLUS
 DOCUMENT NUMBER: 105:33046
 TITLE: Thermal-transfer recording sheets
 INVENTOR(S): Yamauchi, Mineo; Akata, Masanori; Kutsukake, Masaki
 PATENT ASSIGNEE(S): Dainippon Printing Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 61014992	A2	19860123	JP 1984-136968	19840702
	JP 04072718	B4	19921118		
AB	Thermal-transfer recording sheets comprise a thermal-transfer layer on 1 side of a support sheet and a heat-resistant protective layer contg. reaction products of poly(vinyl butyral) and isocyanates and alkali metal salts or alk. earth metal salts of phosphate esters on the other side. The sheets give prints with good gradation, and without stains, sticking, or wrinkles. Thus, BX-1 [poly(vinyl butyral)] 4.5, PhMe 45, MEK 45.5, Gafac RD720 (Na salt of an aliph. phosphate ester) 1.35, Coronate L (75% EtOAc soln. of diisocyanate) 1.8, and NY3 (10% ethylene dichloride-EtOAc soln. of amine catalyst) 0.23 part were mixed to obtain a compn. for the heat-resistant protective layer, which was then coated on 1 side of a 9-.mu. thick PET sheet, dried, and heated to 60.degree. for 48 h to form a film of .apprx.1.8 g/m2. Then, Kayaset Blue 814 (dispersion dye) 4, Denka Butyral 5000 A [poly(vinyl butyral)] 4.3, PhMe 40, MEK 40, and iso-BuOH 10 parts were mixed to obtain a compn., which was coated on the other side of the PET sheet at 1.2 g/m2 (dry) to obtain a heat-sublimation transfer sheet (A). Sep., Vylon 103 (polyester) 8, Elvaloy 741P (ethylene-vinyl acetate copolymer plasticizer) 2, KF-393 (amino-modified silicone oil) 0.125, X-22-343 (epoxy-modified silicone oil) 0.125, PhMe 70, MEK 10, and cyclohexane 20 parts were mixed to obtain a compn. for the image-receiving layer, which was coated on a 150-.mu. thick paper at 4.0 g/m2 (dry) to obtain a receptor sheet (B). A And B were then combined and used in a thermal printer to show good gradation without stains, sticking, or wrinkles.				
IC	ICM B41M005-26				
CC	74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)				
IT	Siloxanes and Silicones, uses and miscellaneous				
	RL: USES (Uses)				
	- (amino-, thermal-transfer recording receptor sheets contg., for use with donor sheets with heat-resistant protective layer for improved image gradation)				
IT	Vinyl acetal polymers				
	RL: USES (Uses)				
	(butyrals, reaction products with isocyanates and phosphate ester metal salts, thermal-transfer recording sheets with protective layers contg., for improved image gradation)				
IT	Recording materials				
	(thermal-transfer, with heat-resistant protective layers for images with good gradation)				
IT	39278-79-0D, reaction products with phosphate ester sodium salts and poly(vinyl butyral) 58206-22-7D, reaction products with diisocyanates and poly(vinyl butyrals)				
	RL: USES (Uses)				
	(thermal-transfer recording materials with heat-resistant protective layer contg., for improved image gradation)				
IT	55599-26-3				
	RL: USES (Uses)				
	(thermal-transfer recording materials with heat-resistant protective layer in recording layer contg., for improved image gradation)				
IT	102962-35-6				
	RL: USES (Uses)				
	(thermal-transfer recording materials with heat-resistant				

protective layers contg., for improved **image** gradation)
 IT 25038-59-9, uses and miscellaneous 97708-39-9
 RL: USES (Uses)
 (thermal-transfer recording **receptor** sheets contg.,
 for use with donor sheets with heat-resistant protective layer for
 improved **image** gradation)

L26 ANSWER 30 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1985:526873 HCAPLUS
 DOCUMENT NUMBER: 103:126873
 TITLE: Shock effects on hydrous minerals and implications for
 carbonaceous meteorites
 AUTHOR(S): Lange, Manfred A.; Lambert, Philippe; Ahrens, Thomas
 J.
 CORPORATE SOURCE: Div. Geol. Planet. Sci., California Inst. Technol.,
 Pasadena, CA, 91125, USA
 SOURCE: Geochim. Cosmochim. Acta (1985), 49(8), 1715-26
 CODEN: GCACAK; ISSN: 0016-7037
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB IR absorption spectra, thermogravimetric analyses, and optical and SEM are
 reported of shock-recovered antigorite [61076-98-0] at pressures of 25 to
 59 GPa. The IR spectra show systematic changes in absorption peaks
 related to structural and mol. surface absorbed water. H2O absorption
 peaks increase at the expense of OH peaks with increasing shock pressure.
 Changes in Si-O bond vibrational modes, with increasing shock pressure,
 parallel those seen for other non-hydrous minerals. Thermogravimetric
 analyses of shock-recovered samples det. the amt. of shock-induced water
 loss. For samples shocked in vented assemblies, the data define a
 relation between shock-induced water loss vs. shock pressure. Results for
 samples shocked in sealed assemblies demonstrate a dependence of water
 loss on shock pressure and target confinement. For the vented assembly
 samples, a linear relation between shock pressure and both the length of
 dehydration interval and the effective activation energy for releasing
 post-shock structural water in antigorite is found. Optical and SEM of
 shocked antigorite reveal a no. of textures thought to be unique to shock
 loading of volatile-bearing minerals. Gas bubbles, which probably are the
 result of shock-released H2O appear to be injected into zones of partial
 melting. This process may produce the vesicular dark veins which are
 distributed throughout heavily shocked samples. The present observations
 suggest several criteria which may constrain possible shock histories of
 the hydrous matrix phases of carbonaceous chondrites. A model is proposed
 for explaining hydrous alteration processes occurring on carbonaceous
 chondrite parent bodies in the course of their accretion. Shock loading
 of hydrous minerals would release and redistribute free water in the
 regoliths of carbonaceous chondrite parent bodies giving rise to the obsd.
 hydrous alterations.

CC 53-9 (Mineralogical and Geological Chemistry)

IT 61076-98-0

RL: OCCU (Occurrence)

(shock pressure-induced water loss from, IR spectral and
 microtextural and **thermogravimetry changes** in
 relation to)

L26 ANSWER 31 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1981:452649 HCAPLUS
 DOCUMENT NUMBER: 95:52649
 TITLE: **Thermographic imaging sheet**
 INVENTOR(S): Franer, Victor Ralley
 PATENT ASSIGNEE(S): Minnesota Mining and Mfg. Co., USA

SOURCE: Brit. UK Pat. Appl., 8 pp.
 CODEN: BAXXDU
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	GB 2044473	A	19801015	GB 1979-10236	19790323
AB	Materials for the prepn. of colored projection slides from graphic originals comprise a dry, peel-apart, IR-transparent imaging sheet with a dye-receptive backing coated on 1 surface with a uniform nontacky layer contg. vaporizable dye dispersed in a film-forming binder. Thus, a binder contg. crepe rubber 6.72, polyterpene tackifier 0.74, antioxidant 0.22, mineral oil plasticizer 0.34, heptane 90.72, and EtOH 1.56 parts and a conc. contg. binder 32.67, dye 8.67, ground glass filler 4.33, and heptane 54.33 parts were mixed with solvent to give a dye source material contg. dye conc. 43.76, binder 24.35, lanolin 0.77, and heptane 28.12 parts. The material was coated onto a 0.012-cm-thick transparent polyester film, covered with 5.9-8.07 g/m2 dye-receptive material contg. vinyl resin 12.0, Ni oleate 1.0, BuOH 2.3, and THF 84.7 parts, to give dry coating wt. 6.99 g/m2, and a protective nontacky layer contg. butene-ethylene-styrene block copolymer 14.38, ground glass 4.16, and heptane 81.46 parts was overcoated to dry wt. 5-10.8 g/m2. The sheet was contacted with an original, passed through a copier at 1.2 in./s and 235.degree.F, and the backing was peeled off to give a pos. colored image on a transparent background.				
IC	B41M005-26				
CC	74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes) Section cross-reference(s): 37, 38				
ST	projection slide thermog sheet; rubber binder thermog sheet; polyterpene tackifier thermog sheet; vinyl polymer dye receptor thermog				
IT	Thermography (color-forming heat -sensitive materials for, contg. peelable - dye-receptive backing, for projection slide prodn.)				
IT	9003-22-9 RL: USES (Uses) (dye receptor , thermog. sheets with layers contg., for projection slide prodn.)				

L26 ANSWER 32 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1980:540892 HCAPLUS
 DOCUMENT NUMBER: 93:140892
 TITLE: Formation and properties of nuclei as applied to the photographic process. An electrochemical model
 AUTHOR(S): Hoffman, Arnold
 CORPORATE SOURCE: Weizmann Inst. Sci., Rehovot, Israel
 SOURCE: Stud. Surf. Sci. Catal. (1980), 4(Growth Prop. Met. Clusters: Appl. Catal. Photogr. Process), 365-70
 CODEN: SSCTDM
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB An alternative hypothesis concerning the nature of the latent image/development process, based on the premise that the latent image is a thermodyn. change in the Ag halide crystal, is presented.
 CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic Processes)
 ST latent **image** development **thermodn** model; nuclei
 property photog process theory
 IT Photography
 (latent **image** formation in, **thermodn**.)

change in silver halide crystal in)
 IT Thermodynamics
 (of photog. latent image formation and development)
 IT Photographic development
 (thermodn. change in silver halide crystals in)

L26 ANSWER 33 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1975:478024 HCAPLUS

DOCUMENT NUMBER: 83:78024

TITLE: Thermal studies (DTA and thermogravimetric analysis) and spectroscopic studies (x-ray and ir) of the dehydration of benzene-1,2,3-tricarboxylic acid dihydrate

AUTHOR(S): Fornies-Marquina, J. M.; Melendez, F.; Chanh, N. B.

CORPORATE SOURCE: Lab. Cristallogr. Phys. Crist., Univ. Bordeaux, Talence, Fr.

SOURCE: J. Therm. Anal. (1975), 7(2), 263-72

CODEN: JTAEA9

DOCUMENT TYPE: Journal

LANGUAGE: French

AB The solid-state dehydration of benzene-1,2,3-tricarboxylic acid and dihydrate is examd. by differential thermal and thermogravimetric anal. and spectroscopic methods (x-ray diffraction and infrared spectroscopy). The 1st step of dehydration (at 70.degree.) involves the loss of the H2O mols. of crystn. and the rearrangement of the acid moles. The 2nd step of dehydration (at 199.degree.) preceeding the fusion of the product corresponds to the elimination of one H2O mol. from the two CO2H groups. The dehydration enthalpy of the loss of H2O of crystn. correspond to the breaking energy of four H bonds. The enthalpies of the other steps are also discussed.

CC 22-3 (Physical Organic Chemistry)

IT Computer program
 (for temp. change in thermogravimetry, PRT-SETARAM)

L26 -ANSWER 34 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1974:427251 HCAPLUS

DOCUMENT NUMBER: 81:27251

TITLE: Luminescent pigments, inorganic

AUTHOR(S): Byler, William H.

CORPORATE SOURCE: U.S. Rad. Corp., Morristown, N. J., USA

SOURCE: Pigment Handb. (1973), Volume 1, 905-23. Editor(s):

Patton, Temple C. Wiley: New York, N. Y.

CODEN: 28GOAO

DOCUMENT TYPE: Conference; General Review

LANGUAGE: English

AB A review of inorganic fluorescent, phosphorescent, heat-sensitive, ir-quenching type and uv-responsive type pigments.

CC 42-0 (Coatings, Inks, and Related Products)

ST review luminescent inorg pigment; fluorescent pigment review; phosphorescent pigment review; thermographic pigment review; IR quenching pigment review; UV responsive pigment review

L26 ANSWER 35 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1969:455180 HCAPLUS

DOCUMENT NUMBER: 71:55180

TITLE: Thermography by infrared detector.

Tellurium-mercury-cadmium alloys

AUTHOR(S): Verie, Christian

CORPORATE SOURCE: Lab. Magn. Phys. Solide, Meudon-Bellevue, Fr.

SOURCE: Sciences (Paris) (1968), No. 57, 49-51
 CODEN: SCITB6
 DOCUMENT TYPE: Journal
 LANGUAGE: French

AB Photovoltaic response in the ir region (0-14 .mu.) was studied as a function of x in single-crystal $Cd_xHg_{1-x}Te$ at 77.degree.K. Max. spectral response shifted with x from .apprx.5.5 .mu. to 10.6 .mu. (x = 0.19) at 77.degree.K. The latter is located in a region transparent to the atm. and makes possible the use of these alloys as detectors in earth-space telecommunications, aerial reconnaissance, and in detection of clear atm. turbulence. Moreover, p-n junctions (prepd. by diffusion of Hg into the alloy single crystals) at 20.degree.K. gave max. photovoltaic responses at wavelengths .ltoreq.35 .mu., and make possible the application of these detectors to thermographic studies of black bodies at temps. near 80.degree.K.

CC 73 (Spectra and Other Optical Properties)

ST photovoltaic **response** Cd Te Hg; cadmium Te Hg photovoltaic **response**; tellurium Cd Hg photovoltaic **response**; mercury Cd Te photovoltaic **response**; **thermography** IR detector; IR detector **thermography**; detector **IR thermography**; semiconductors photovoltaic **response**

IT Light, **infrared**

(detectors, **thermography** of cadmium telluride-mercury telluride solid solns.)

IT Blackbody

(**thermography** of, photovoltaic **response** of cadmium telluride-mercury telluride solid solns. as detector for)

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DEL HIS

L1 5873 S (THERMAL OR THERMOG? OR THERMOD?) (3A) IMAG?
 L2 572 S (IR OR INFRARED OR INFRA RED) (3A) (THERMOG? OR THERMOMET?)
 L3 6406 S L1 OR L2
 L4 79 S THERMOGENESIS
 L5 2 S L3 AND L4
 L6 80 S (THERMOD? OR THERMOG?) (3A) (CHANG? OR RESPONS?)
 L7 51509 S (HEAT (3A) (PROD? OR CHANG?))
 L8 7 S L3 AND L6
 L9 22 S L3 AND (B04 OR D16)/DC
 L10 377 S TEST AGENT#
 L11 2 S L3 AND L10
 L12 106 S L7 AND L3
 L13 1 S L12 AND L9
 L14 372090 S S03/DC
 L15 8 S L12 AND L14
 L16 1 S L15 AND B/DC
 L17 27 S L3 AND B/DC
 L18 24 S L3 AND D/DC
 L19 2 S L3 AND C/DC
 L20 43 S L17 OR L18 OR L19
 L21 465830 S CELL# OR PROTEIN# OR CARBOHYDR? OR ENZYME# OR LIPID# OR NUCLE
 L22 10 S L20 AND L21
 L23 15 S L5 OR L8 OR L11 OR L13 OR L16 OR L22
 L24 30317 S (TEMP## OR TEMPERATUR?) (3A) (CHANG?)
 L25 151 S L3 AND L24
 L26 3 S L25 AND (B OR D OR C)/DC

L27 16 S L23 OR L26

FILE 'WPIDS' ENTERED AT 12:01:56 ON 10 JUN 2002

=> d .wp 1-16

L27 ANSWER 1 OF 16 WPIDS (C) 2002 THOMSON DERWENT

AN 2002-188131 [24] WPIDS

DNN N2002-142685 DNC C2002-057991

TI **Infrared thermography** method for measuring vasodilation or altered blood flow in a given area in a patient.

DC A96 B05 B07 D16 D22 P31

IN MAREK, P A; TROCHA, A M

PA (NITR-N) NITROMED INC; (MARE-I) MAREK P A; (TROC-I) TROCHA A M

CYC 95

PI WO 2001085013 A2 20011115 (200224)* EN 68p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
NL OA PT SD SE SL SZ TR TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ
LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD
SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2001061244 A 20011120 (200224)

US 2001046471 A1 20011129 (200224)

ADT WO 2001085013 A2 WO 2001-US14699 20010508; AU 2001061244 A AU 2001-61244
20010508; US 2001046471 A1 Provisional US 2000-202935P 20000509, US
2001-850081 20010508

FDT AU 2001061244 A Based on WO 200185013

PRAI US 2000-202935P 20000509; US 2001-850081 20010508

AB WO 200185013 A UPAB: 20020416

NOVELTY - A method of measuring a **thermodynamic change** in an area of interest in a patient comprises: (a) measuring the baseline temperature in the area using **infrared thermography**; (b) administering to the patient a composition; (c) measuring the **temperature change** in the area using **infrared thermography**; and (d) comparing the temperature obtained with the baseline temperature.

DETAILED DESCRIPTION - A method of measuring a **thermodynamic change** in an area of interest in a patient comprises:

(a) measuring the baseline temperature in the area using **infrared thermography**;

(b) administering to the patient a composition comprising at least one compound that donates, transfers or releases nitric oxide, elevates endogenous levels of endothelium-derived relaxing factor, stimulates endogenous synthesis of nitric oxide or is a substrate for nitric oxide synthase or a salt thereof and/or at least one vasoactive agent or a salt;

(c) measuring the **temperature change** in the area using **infrared thermography**; and

(d) comparing the temperature obtained with the baseline temperature where a difference in the two temperatures indicates that the compound causes a **thermodynamic change**.

INDEPENDENT CLAIMS are also included for:

(1) a method (2) for identifying a compound that produces vasodilation or changes in blood flow; and

(2) composition comprising at least one S-nitrosothiol compound or its salt and at least one penetration enhancer.

ACTIVITY - Vasotropic; antiinflammatory; hypotensive; tranquilizer; antiulcer.

No specific biological data given.

MECHANISM OF ACTION - None given.

USE - The method is used for measuring vasodilation or changes in blood flow in a patient and can be used for diagnosing diseases or disorders related to vasodilation and changes in blood flow e.g. Raynaud's syndrome, inflammation, hypertension, gastrointestinal disorders (all claimed) e.g. inflammatory bowel disease, peptic ulcers, gastric hyperacidity, dyspepsia, gastroparesis, Zollinger-Ellison syndrome, gastroesophageal reflux disease, short-bowel (anastomosis) syndrome, hypersecretory states associated with systemic mastocytosis or basophilic leukemia and hyperhistaminemia and bleeding peptic ulcers, sexual dysfunction especially female sexual arousal or central nervous system disorders. The method can also be used for screening and identifying drug candidates for treating such disorders.

Dwg.1/6

L27 ANSWER 2 OF 16 WPIDS (C) 2002 THOMSON DERWENT

AN 2001-579253 [65] WPIDS

DNN N2001-431111 DNC C2001-171955

TI Nanotube physical property modification method in microelectronic device application, comprises disturbing hexagonal core lattice structure by applying stress conditions to nanotube.

DC B04 J04 L03 S03 W04

IN YAKOBSON, B I

PA (UYNC-N) UNIV NORTH CAROLINA STATE

CYC 1

PI US 6280677 B1 20010828 (200165)* 8p

ADT US 6280677 B1 Provisional US 1997-64539P 19971105, US 1998-186396 19981104

PRAI US 1997-64539P 19971105; US 1998-186396 19981104

AB US 6280677 B UPAB: 20011108

NOVELTY - A method of modifying physical properties of a nanotube comprises subjecting a nanotube having hexagonal core lattice structure subjected to stress conditions, so as to disturb the lattice structure and form pentagon-heptagon and heptagon-pentagon dipoles (30a,30b) of dislocation cores.

DETAILED DESCRIPTION - A method of modifying physical properties of a nanotube comprises subjecting a nanotube having hexagonal core lattice structure subjected to stress conditions, so as to disturb the lattice structure and form pentagon-heptagon and heptagon-pentagon dipoles (30a,30b) of dislocation cores. The dipole of dislocation cores splits and propagates in the nanotube are such that the cores are separated by a domain of modified lattice structure so as to alter its electrical property.

USE - For changing electrical, chemical and mechanical properties of nanotubes used in infrared sensors for thermal imaging and nanoscale diodes, photoelectric cells, nanoscale transistors. Also for chemical sensors used in environment characterization and intracellular nanoprobes used in biological and medical studies.

ADVANTAGE - Since by applying stress conditions, the chemical functionality of nanotube is changed, the nanotubes are allowed to be useful in a variety of end use applications requiring modified structure.

DESCRIPTION OF DRAWING(S) - The figure shows a nanotube having altered lattice structure.

Dipoles 30a,30b

Dwg.1/5

L27 ANSWER 3 OF 16 WPIDS (C) 2002 THOMSON DERWENT

AN 2001-367516 [38] WPIDS

DNN N2001-268164 DNC C2001-112699

TI Non-invasive, rapid diagnostic and drug screening methods, e.g. for diagnosis of lipodystrophy, involving measurement of temperature

differences using **infrared thermography**.

DC B04 P31

IN LENHARD, J M; PAULIK, M A

PA (GLAX) GLAXO GROUP LTD

CYC 94

PI WO 2001035819 A1 20010525 (200138)* EN 106p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ

NL OA PT SD SE SL SZ TR TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM

DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC

LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE

SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2001016229 A 20010530 (200152)

ADT WO 2001035819 A1 WO 2000-US31755 20001117; AU 2001016229 A AU 2001-16229 20001117

FDT AU 2001016229 A Based on WO 200135819

PRAI US 1999-441493 19991117

AB WO 200135819 A UPAB: 20010711

NOVELTY - Methods for diagnosing lipodystrophy in a body region in vivo, by: measuring the temperature of the region using **infrared thermography** (ITG), a raise in temperature relative to that in a normal subject indicating lipodystrophy; monitoring the dyslipidemic effect of drug therapy, by monitoring the patient's body temperature using ITG; and determining the temperature of internal tissues or organs.

DETAILED DESCRIPTION - Methods are claimed for: (a) diagnosing lipodystrophy in a body region in vivo, by measuring the temperature of the region (specifically the face or the back of the neck) using **infrared thermography** (ITG), a raise in temperature relative to that in a normal subject indicating lipodystrophy; (b) monitoring the dyslipidemic effect of drug therapy, by monitoring the patient's body temperature using ITG, a raise in temperature relative to an earlier value indicating a dyslipidemic effect; and (c) determining the temperature of internal tissues or organs, by replacing a portion of the skin near the tissue or organ with an infrared-invisible polymer and measuring the temperature by ITG.

USE - Method (b) is specifically used (claimed) for measuring the temperature of an animal before and after administration of a **test agent**, a **change in temperature** indicating that the agent had a thermodynamic effect on the tissue or organ. More generally ITG methods are useful for monitoring physiological and molecular events eliciting a thermogenic effect in animals (including humans), plants, tissues, **cells** and **cell-free** systems, e.g. in screening, identifying and ranking drug candidates for multiple diseases, disorders and conditions. Methods (a) and (b) are especially used (claimed) for diagnosing lipodystrophy in HIV-positive patients and/or for monitoring the dyslipidemic effect of therapy with a protease inhibitor.

ADVANTAGE - A rapid, non-invasive method for measuring real-time **thermogenesis** is provided. In particular a rapid, early method is provided for diagnosis of lipodystrophy syndrome in HIV/AIDS patients receiving protease inhibitor therapy.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic of an **infrared thermography** device suitable for use in **imaging thermogenesis** in a living animal.

Infrared camera 1

Isothermal chamber 2

Heating pad (37 deg. C) 3

Computer interface 4

Interscapular brown tissue 5

Dwg.2/46

L27 ANSWER 4 OF 16 WPIDS (C) 2002 THOMSON DERWENT
 AN 2001-111660 [12] WPIDS
 DNN N2001-081996 DNC C2001-033037
 TI Hybridized biological microbolometer, useful for thermal infrared detection, comprises a heat sensitive **protein** layer with electrical contacts on a silicon dioxide substrate insulator.
 DC D16 L03 U12
 IN DEB, K
 PA (USSA) US SEC OF ARMY
 CYC 1
 PI US 6160257 A 20001212 (200112)* 5p
 ADT US 6160257 A US 1998-114249 19980706
 PRAI US 1998-114249 19980706
 AB US 6160257 A UPAB: 20010302
 NOVELTY - A hybridized biological microbolometer (10) comprising a heat sensitive **protein** layer with electrical contacts, on a silicon dioxide substrate insulator, is new.
 USE - For thermal infrared detection.
 ADVANTAGE - The microbolometer has increased sensitivity, provides higher imaging sensitivity, and reduces 1/f and Johnson noise therefore giving higher resolution in **thermal imagers**.
 DESCRIPTION OF DRAWING(S) - The figure shows a representation of a single detector element.
 Hybridized biological microbolometer 10
 Dwg.1/3

L27 ANSWER 5 OF 16 WPIDS (C) 2002 THOMSON DERWENT
 AN 2001-033661 [05] WPIDS
 DNN N2001-026358 DNC C2001-010355
 TI Recording materials useful in direct **thermal imaging** apparatus comprise time-temperature indicator compound convertible from inactive to active state by application of heat.
 DC A97 B07 E19 G05 P75 T04
 IN ROTH, J D
 PA (NATC) NCR INT INC
 CYC 25
 PI EP 1048477 A1 20001102 (200105)* EN 10p
 R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
 ADT EP 1048477 A1 EP 2000-303457 20000425
 PRAI US 1999-302482 19990430
 AB EP 1048477 A UPAB: 20010124
 NOVELTY - A recording material (20) comprises at least one time-temperature indicator (10) (TTI) compound which is convertible from an inactive to an active state by heating in a direct **thermal imaging** apparatus. The recording material functions as a time **temperature** indicator exhibiting detectable **changes** in response to an exposure element when the indicator compound is active.
 DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a method converting the indicator compound from inactive state to active state.
 USE - In a direct **thermal imaging** apparatus (claimed). TTIs are used for monitoring time and temperature exposure of perishables in-transit, consumer packages, medical perishables, packaged fresh and frozen foods, dairy products, meat, pharmaceutical, photographic film, canned goods, spices, vitamins, seeds, plants, paints, coatings, adhesives, caulks, sterilization indicators and cooking indicators.
 ADVANTAGE - TTI labels can be activated at the site of the application and remove need for protection of the labels prior to use. TTI gradually changes with time typically faster at elevated temperatures and

slower at low temperatures. The recording material can be manufactured, stored and shipped under normal conditions without resort to refrigerated and light-protected environments.

DESCRIPTION OF DRAWING(S) - The figure shows the aging sequence of a time-temperature indicator.

Central portion 1

Outer ring 2

Time-temperature indicator 10

Recording material. 20

Dwg.1A/1

L27 ANSWER 6 OF 16 WPIDS (C) 2002 THOMSON DERWENT

AN 2000-452070 [39] WPIDS

DNN N2000-336598 DNC C2000-137722

TI Infrared optical element used in a sensor for analyzing fluids, especially biological fluids, or body tissue in diagnostics, or cosmetic skin analysis, comprises a Knoop hardness of up to 20.

DC B04 E32 J04 L03 P81 S03 V07

IN KATZIR, A

PA (KATZ-I) KATZIR A

CYC 90

PI WO 2000036458 A1 20000622 (200039)* EN 59p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL

OA PT SD SE SL SZ TZ UG ZW

W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES

FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS

LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL

TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2000015833 A 20000703 (200046)

ADT WO 2000036458 A1 WO 1999-IL672 19991209; AU 2000015833 A AU 2000-15833 19991209

FDT AU 2000015833 A Based on WO 200036458

PRAI US 1998-111929P 19981211

AB WO 200036458 A UPAB: 20001006

NOVELTY - The infrared (IR) optical element has a Knoop hardness of up to 20 and includes up to 10 parts per million (ppm) of impurities, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) forming the novel optical element, comprising cold working an ingot of an ionic crystalline material having a Knoop hardness of up to 20 and including up to 10 ppm impurities;

(2) a sensor for attenuated total reflection spectroscopy, comprising a flat portion up to 1 mm thick of the ionic crystalline material, having a Knoop hardness of up to 20 and including up to 10 ppm impurities, or having an elongation ratio of at least 10 % at a temperature below 200 deg. C;

(3) a cell, for attenuated total reflection spectroscopy, comprising the sensor of (2);

(4) a spectrometer, for attenuated total reflection spectroscopy, comprising the sensor of (2), or the cell of (3);

(5) making a sensor for total reflection spectroscopy, comprising forming, on a surface of a substrate having an index of refraction, a layer, including only an ionic crystalline material having a Knoop hardness of up to 20, or an elongation ratio of at least 10 % at a temperature below 200 deg. C, and having an index of refraction lower than that of the substrate;

(6) an optical element, comprising an ionic crystalline material having an elongation ratio of at least 10 % at a temperature below 200 deg. C, and including up to 10 ppm impurities; and

(7) forming an optical element, comprising cold working an ingot of

an ionic crystalline material having an elongation ratio of at least 10 % at a temperature below 200 deg. C, and including up to 10 ppm impurities.

USE - The infrared optical element is used in a sensor, for analyzing a fluid by contacting the sensor with the fluid and measuring its IR spectrum, and for analyzing a body tissue by contacting the sensor with the tissue, preferably subcutaneously using a hypodermic needle, catheter or endoscope, and measuring its IR spectrum (claimed). The sensor is useful in the diagnosis of tissues and biological fluids, in medicine, in cosmetics for skin analysis, or for measuring the diffusion of cosmetics into the skin. They can also be used in **thermal imaging** devices, IR lasers, and IR spectroscopy in industry, science, medicine clinical chemistry and pathology.

ADVANTAGE - The optical elements can be manufactured in less time, at lower cost, and with easier handling suitable for mass production. As lower temperatures are used for the cold working, more accurate dimensions can be achieved and surface finish is better, compared to more conventional materials such as other inorganic crystals and polymers. The low impurity content prevents darkening of the material.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic illustration of two cold working methods of forming an infrared optical element.

Monocrystalline ingot 64

Dies 66

Piston 68

Lower die 72

Punch 74

Piston 76

Base 78.

Dwg. 5/20

L27 ANSWER 7 OF 16 WPIDS (C) 2002 THOMSON DERWENT

AN 2000-430907 [37] WPIDS

DNC C2000-130844

TI New aliphatic copolymers and polyester resins and compositions with regulated thermal, hydrolytic and biological degradability for use e.g. as coating for agricultural compositions and base film for marking films.

DC A18 A23 A82 A97 C04 G02 G05

IN ITO, M; KAJIKAWA, Y; SAKANE, M; SHIMIZU, K; TANIGAWA, M

PA (DAIL) DAICEL CHEM IND LTD

CYC 21

PI WO 2000029460 A1 20000525 (200037)* JA 145p

RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

W: US

JP 2000143781 A 20000526 (200037) 8p

EP 1048683 A1 20001102 (200056) EN

R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

JP 2000327798 A 20001128 (200065) 6p

JP 2000351686 A 20001219 (200104) 7p

JP 2000351687 A 20001219 (200104) 10p

JP 2001002763 A 20010109 (200107) 10p

JP 2001064333 A 20010313 (200118) 11p

JP 2001064565 A 20010313 (200118) 10p

JP 2001105745 A 20010417 (200128) 5p

JP 2001105750 A 20010417 (200128) 7p

ADT WO 2000029460 A1 WO 1999-JP6367 19991115; JP 2000143781 A JP 1998-323159 19981113; EP 1048683 A1 EP 1999-972231 19991115; WO 1999-JP6367 19991115; JP 2000327798 A JP 1999-140708 19990520; JP 2000351686 A JP 1999-161729 19990608; JP 2000351687 A JP 1999-162951 19990609; JP 2001002763 A JP 1999-173317 19990618; JP 2001064333 A JP 1999-238490 19990825; JP 2001064565 A JP 1999-238439 19990825; JP 2001105745 A JP 1999-286716

19991007; JP 2001105750 A JP 1999-286766 19991007

FDT EP 1048683 A1 Based on WO 200029460

PRAI JP 1999-286766 19991007; JP 1998-323159 19981113; JP 1999-140708
 19990520; JP 1999-161729 19990608; JP 1999-162951 19990609; JP
 1999-173317 19990618; JP 1999-238439 19990825; JP 1999-238490
 19990825; JP 1999-286716 19991007

AB WO 200029460 A UPAB: 20000807

NOVELTY - Aliphatic polyester is claimed containing lactide and/or lactone monomers and with the terminal alcohol groups reduced to 50% or less and the terminal carboxy groups reduced to 30 or less.

DETAILED DESCRIPTION - DETAILED DESCRIPTION - The following are claimed (A) an aliphatic polyester containing lactide and/or lactone monomers and with the terminal alcohol groups reduced to 50% or less and the terminal carboxy groups reduced to 30 or less; (B) an agricultural or horticultural particulate composition comprising (i) a coating film comprising (a) the above polyester or (b) a cyclic cellulose ester and optionally an olefin, olefin copolymer, vinylidene chloride, vinylidene chloride copolymer, diene, wax, petroleum resin, natural resin, cellulose acetate resin, polycarbonate, and/or fat; and (ii) an active agent; (C) a base film for marking films comprising a grafted, ring opened hydroxy containing fatty acid cellulose ester resin; (D) a **thermal transfer image receptor** comprising hydroxy containing ring opened cyclic cellulose ester compound as dye; (E) a conductive coating comprising (i) (a) 2-20 wt% grafted, ring opened hydroxy containing ester compound and (b) 98-80 wt% resin coating; and (ii) (a) 40-60 wt% conductive carbon black and (b) 60-40 wt% scale form- graphite provided that (a) + (b) in (i) and (a) +(b) in (ii) = 100%; (F) graft copolymer comprising hydroxy containing ring opened cyclic cellulose ester compound containing 1-30 wt% cellulose ester; and 70-99 wt% unsaturated monomer with further conditions listed in the claims; (G) a coating composition containing the graft copolymer in (F); and (H) a lactide/lactone copolymer having a ratio of lactidenate of 3 or more and a ratio of lactonenate of 1-10 with further conditions listed in the claims.

USE - As aliphatic copolymers and polyester resins and compositions with regulated-thermal, hydrolytic and-biological degradability for use e.g. as biodegradable coatings for agricultural and horticultural particulate compositions containing e.g. fertilizers, as a base film for marking films, as **thermal transfer image receptors** for forming recorded images, as a conductive coating, as a coating for e.g. mending, finishing or protecting industrial machines, building and construction materials, furniture and cars and as a heat resistant copolymer for use in e.g. compost bins, hot melt glues and fishing lines.

ADVANTAGE - Polyester has regulatable thermal, hydrolytic and biodegradable properties. Fertilizers have controlled release and leave no decomposition products in the soil. Marking films are free from problems such as volatilization or migration of plasticizers. **Thermal transfer image receptor** has good releasability, developed color intensity and brightness. Conductive coating has good storage stability, adhesion and conductivity. Coating composition is not toxic, is not an irritant and has good dryability. Copolymer has good heat and impact resistance.

Dwg.0/9

L27 ANSWER 8 OF 16 WPIDS (C) 2002 THOMSON DERWENT

AN 2000-086621 [07] WPIDS

DNN N2000-067995 DNC C2000-024095

TI Screening of **test agent** such as drugs for its ability to produce **thermodynamic change** in cell-free sample using **infrared thermography**.

DC B04 C07 D16 S03 U12
 IN LENHARD, J M; PAULIK, M A
 PA (GLAX) GLAXO GROUP LTD
 CYC 87
 PI WO 9960630 A1 19991125 (200007) * EN 92p
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
 OA PT SD SE SL SZ UG ZW
 W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB
 GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU
 LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR
 TT UA UG US UZ VN YU ZA ZW
 AU 9940774 A 19991206 (200019)
 EP 1086494 A1 20010328 (200118) EN
 R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
 ADT WO 9960630 A1 WO 1999-US10579 19990514; AU 9940774 A AU 1999-40774
 19990514; EP 1086494 A1 EP 1999-924222 19990514, WO 1999-US10579 19990514
 FDT AU 9940774 A Based on WO 9960630; EP 1086494 A1 Based on WO 9960630
 PRAI US 1998-85736P 19980515
 AB WO 9960630 A UPAB: 20000209
 NOVELTY - Screening a **test agent** for its ability to
 produce **thermodynamic change** in a **cell-free**
 sample comprising measuring the temperature of the sample before and after
 contact with the **test agent** using **infrared**
thermography, is new.
 DETAILED DESCRIPTION - Screening (I) a **test agent**
 for its ability to produce **thermodynamic change** in a
cell-free sample comprising measuring the temperature of the
 sample using **infrared (IR) thermography**
 before and after contact with the **test agent** using
infrared thermography, is new. The difference in sample
 temperature before and after contact with the agent is indicative of
 induced **thermodynamic change**.
 INDEPENDENT CLAIMS are also included for the following:
 (i) screening a **test agent** (e.g. a drug) for its
 ability to produce **thermodynamic change** in an in-vitro
 cell sample by the method of (I);
 (ii) monitoring the physical state of a compound or composition
 comprising measuring the temperature of the compound or composition using
IR thermography, over time;
 (iii) determining amount of a compound or composition in a container
 comprising measuring temperature of the compound or composition;
 (iv) determining the thermogenic effect of a **test**
agent on a sample comprising contacting a sample with different
 amounts agent or with the same amount of agent at different points in
 time, and measuring the difference in temperature;
 (v) screening animals for their ability to respond thermogenically
 to a **test agent** comprising measuring the
thermogenic response of animals to **test**
agents, using **IR thermography**.
 USE - The tests are useful for screening, identifying,
 characterizing, ranking and selecting **test agents** such
 as drugs (catabolic or anabolic agents) for use in treating various
 diseases, disorders or conditions associated with changes in metabolism,
 toxicity, cellular growth, organ development and/or differentiation based
 on potency, selectivity, efficacy, pharmacokinetics and pharmacodynamics
 of the agent in various **cell-free**, **cell**, tissue,
 plant, animal and human-based **thermogenesis** assays using
IR thermography. The **IR thermography**
 is further used for analyzing the effect of **test agents**
 on **heat production** in **cell**, tissue, plant

and animal types during **enzyme** catalysis and **ligand** interaction with a binding partner. The **IR thermography** is also used for evaluating the physical state and/or amount of a compound (claimed), monitoring the effect of environmental changes and/or genotypes on **thermogenesis** in various **organisms**, drug-drug interactions in various **organisms**, evaluating the safety profile of pharmacological agents and monitoring the safety, potency, efficacy of various treatments on hair loss and growth.

ADVANTAGE - The tests provide a non-invasive method of analyzing the effects of agents on **heat production** in animals, plants, **cells** and chemical reactions in **cell-free** systems by **IR thermography**. The screening, identification and ranking of drug compounds for their ability to alter heat dissipation and application in treating various diseases, disorder and conditions is carried out effectively.

Dwg.0/25

L27 ANSWER 9 OF 16 WPIDS (C) 2002 THOMSON DERWENT
 AN 1998-499085 [43] WPIDS
 DNN N1998-389905 DNC C1998-150466
 TI **Nucleic acid** sequence detection method using scanning probe microscope - involves performing imaging of sample which is thermal denatured by lowering temperature.
 DC B04 D16 J04 S02 S03
 IN HORI, K; OKADA, T; TAKAHASHI, T
 PA (OLYU) OLYMPUS OPTICAL CO LTD
 CYC 2
 PI JP 10215899 A 19980818 (199843)* 13p
 US 6194148 B1 20010227 (200114)
 ADT JP 10215899 A JP 1997-25219 19970207; US 6194148 B1 US 1998-19931 19980206
 PRAI JP 1997-25219 19970207
 AB JP 10215899 A UPAB: 19981028
 A **nucleic acid** detection method involves performing thermal denaturation of a mixed sample that contains **nucleic acid** of a complementary sequence and **nucleic acid** probe. The higher order structure of the acid present in the sample is then eliminated. The sample is again denatured by lowering the temperature and is then kept in a board of a scanning probe microscope. Finally, imaging of the sample is performed.

USE - The method is used for the detection of specific **nucleic acid** sequences.

ADVANTAGE - The method allows reduction of noise at time of detection. It also detects reliably, even when sample has very small amount.

Dwg.0/9

L27 ANSWER 10 OF 16 WPIDS (C) 2002 THOMSON DERWENT
 AN 1998-145714 [13] WPIDS
 DNN N1998-115243
 TI Lamination testing method of coatings on substrates - heating coating by irradiation with light flashes, recording temporal change of temp. distribution by **IR thermography** camera, and displaying distribution in timewise and local resolution for detecting areas with loss of lamination.
 DC S02 S03 W06
 IN BECKER, E
 PA (SIEI) SIEMENS AG
 CYC 21
 PI WO 9805949 A1 19980212 (199813)* DE 21p
 RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

W: JP KR RU US

ADT WO 9805949 A1 WO 1997-DE1615 19970730

PRAI DE 1996-19630988 19960731

AB WO 9805949 A UPAB: 19980330

The method includes the steps of heating the coating area to be examined through irradiating it with light flashes, and recording the temporal change of the temperature distribution on the surface of the coating by means of an IR **thermography** camera (2).

The temperature distribution is displayed in a timewise and local resolution of the surface for detecting areas with increased temperature wrt the surrounding surface area, representing areas with a loss of lamination.

USE - Esp. testing vacuum plasma sprayed coatings on gas turbine blade manufactured through nickel-alloy based casting, e. g of type IN 939, IN 738 LC or PWA 1483 SX.

ADVANTAGE - Provides non-destructive method, which enables reliable detection of disturbances in coating.

Dwg.1/3

L27 ANSWER 11 OF 16 WPIDS (C) 2002 THOMSON DERWENT

AN 1997-311566 [29] WPIDS

DNN N1997-257944 DNC C1997-100425

TI **Thermal imaging** system is triggered by, e.g. heart beat - captures human brain cell images at selected moment, quality and information content contained within image is not down-graded by other bodily functions.

DC B04 D16 P31 S03 S05 W04

IN CABANSKI, W; ERNE, S N; NOTHAFT, P

PA (AEGE) AEG INFRAROT-MODULE GMBH; (ERNE-I) ERNE S N; (TELE) TEMIC TELEFUNKEN MICROELECTRONIC GMBH

CYC 1

PI DE 19544187 A1 19970605 (199729)* 4p

ADT DE 19544187 A1 DE 1995-19544187 19951128

PRAI DE 1995-19544187 19951128

AB DE 19544187-A UPAB: 19970716

Process generates **thermal images** of cells within a limited zone (20) on living humans or animal bodies (2). The novelty is that the **thermal imaging** system (1) incorporates:

(a) an infra-red camera (10) which can be triggered when required, and a display unit (11) presenting **thermal images**;

(b) a camera, triggered by signals generated in the body (2), or is synchronised as required;

(c) **thermal images**, processed and displayed showing the change in the cells and their activity with time;

(d) an infra-red camera (10), triggered by signals such as the heart beat or breathing;

(e) cells, especially brain cells, laid bare by surgical intervention, and

(f) a camera, synchronised with the trigger signal to capture images associated with selected patient stimuli.

USE - The system captures images of selected, e.g. tumour cell activity at a required moment.

ADVANTAGE - The quality and information content contained within the image is not downgraded by other bodily functions.

Dwg.1/1

L27 ANSWER 12 OF 16 WPIDS (C) 2002 THOMSON DERWENT

AN 1997-296863 [27] WPIDS

DNN N1997-245315 DNC C1997-096246

TI Temperature measurement in biological systems - is based on fluorescence emission from lipid vesicle impregnated with fluorescent dye.

DC B04 D16 E14 E24 J04 S03

IN BERNIS, M W; LIU, Y; SONEK, G J; TROMBERG, B J

PA (REGC) UNIV CALIFORNIA

CYC 1

PI US 5631141 A 19970520 (199727)* 11p

ADT US 5631141 A US 1995-435354 19950505

PRAI US 1995-435354 19950505

AB US 5631141 A UPAB: 19970702

High resolution in situ measurement of temperature at a location within an aqueous biological system comprises: (a) selecting a vesicle comprising a phospholipid membrane impregnated with an environmentally sensitive fluorescent dye, the membrane having a transition temperature at which the membrane undergoes a phase transition between gel and liquid crystalline states chosen to be in predetermined relationship to the anticipated temperature range of the system to be measured, the membrane having a known relationship between generalised polarisation and temperature, generalised polarisation being the ratio $(IG-IL)/(IG+IL)$ of the difference to the sums of the intensities measured at the maximum emission wavelengths in the gel (IG) and liquid crystalline (IL) phases; (b) introducing the vesicle into the biological system to be measured; (c) manipulating the vesicle to the location where temperature is to be measured; (d) optically measuring the generalised polarisation of the vesicle, and (e) calculating a value for the temperature of the system from the generalised polarisation measured and the known relationship between temperature and generalised polarisation for the membrane of the vesicle. The method further comprises (f) obtaining a calibration generalised polarisation for the vesicle by measuring the generalised polarisation of the vesicle at a predetermined temperature prior to introduction of the vesicle into the biological system to be measured; where the calibration generalised polarisation is utilised in step (e) by modifying the known relationship between temperature and generalised polarisation for the membrane of the vesicle. The manipulating of the vesicle comprises use of an optical laser trap consisting of a highly focused laser beam that creates optical tweezers. The vesicle is attached to an optical fiber and the step of manipulation of the vesicle comprises manipulation of the optical fiber. The optical fiber is disposed in a catheter.

The environmentally sensitive fluorescent dye comprises 6-dodecanoyl-2-dimethylaminonaphthalene, i.e. Laurdan (TM).

USE/ADVANTAGE - The vesicle serves as a sensor that is ideally adapted for use in situ. The sensor enables the user to accurately perform microthermometry of biological systems. The sensor is made of organic materials similar to those of the biological system's cell nuclei and membranes, and is micron-sized. Therefore, it can be embedded within biological systems such as cells, or transported within the body, to facilitate noninvasive and non-destructive site-specific microthermometric measurements. The sensor may be transported and manipulated using radiation pressure forces of focused laser beams, or even coupled, as a transducer element, to an optical fiber tip for remote sensing of temperature. Given the high spatial resolution of the sensor, it should also be possible to perform metabolic imaging and thermal mapping of cell and tissue systems at the submicron level. This would assist in assessing, optically and in real time, the effects of exposure to highly focused laser beams on tissues during diagnostic and therapeutic treatment. Further, such a sensor will allow for study of the effects upon tissues of therapeutic treatment techniques such as the use of lasers, and even of "optical tweezers" and other procedures thought to be benign.

Dwg.0/5

L27 ANSWER 13 OF 16 WPIDS (C) 2002 THOMSON DERWENT
 AN 1994-346809 [43] WPIDS
 DNN N1994-272359 DNC C1994-157713
 TI Reversible thermographic recording material giving good image contrast - comprises overcoat layer contg. pearl pigment coated on at least part of thermographic layer.
 DC A89 G05 P75
 PA (OJIP) OJI PAPER CO
 CYC 1
 PI JP 06270542 A 19940927 (199443)* 4p
 ADT JP 06270542 A JP 1993-66556 19930325
 PRAI JP 1993-66556 19930325
 AB JP 06270542 A UPAB: 19941216
 Recording material comprises the **thermographic** layer, **changing** reversibly the transparency of the material depending on the temperature change. Overcoat layer contg. the pearl pigment is coated on at least one part of the thermographic layer.
 USE/ADVANTAGE - Reversible **thermographic** recording material gives **image** of good contrast.
 Dwg.0/0

L27 ANSWER 14 OF 16 WPIDS (C) 2002 THOMSON DERWENT
 AN 1993-282704 [36] WPIDS
 DNN N1993-217242
 TI **Thermographic image** characteristic change sensing appts. eg for PCB monitoring - determining deviation in coordinates of reference points and correcting positions of successive images so that monitored point is always in same position.
 DC S02 S03 T01 V04
 IN SALISBURY, R
 PA (THER-N) THERMOTEKNIK SYSTEMS LTD
 CYC 2
 PI GB 2264779 A 19930908 (199336)* 22p
 US 5483604 A 19960109 (199608) 6p
 GB 2264779 B 19960501 (199621) 1p
 ADT GB 2264779 A GB 1992-3583 19920220; US 5483604 A Cont of US 1993-19703 19930219, US 1994-317842 19941004; GB 2264779 B GB 1992-3583 19920220
 PRAI GB 1992-3583 19920220
 AB GB 2264779 A UPAB: 19931122
 Changes in characteristics on an image are monitored at a predetermined position or zone (12, 13) of the image. The image is corrected to allow for changes in the monitored position or zone (12, 13) by reference to observed deviation in coordinates of reference points (9-11) of the **image**. Successive **thermographic images** of a printed circuit board may be displayed on a VDU screen (4). Temperature-dependent colour characteristics of the spot or line may be determined by image subtraction to monitor the development of hot spots.
 Changes in the coordinates of reference points (9-11) on the image may be noted by a cursor controlled by a mouse and used to correct the positions of successive images on the screen so that the monitored point (12) or line (13) is always in the same position. This correction is achieved by transformation of data using spreadsheet software.
 USE/ADVANTAGE - Eg for monitoring hot spots in electrical or electronic equipment etc. and physical structures such as buildings or bridges for failure in insulation, lamination or thermal conduction.
 Dwg.2,3/

L27 ANSWER 15 OF 16 WPIDS (C) 2002 THOMSON DERWENT

AN 1990-179501 [24] WPIDS
DNN N1990-139457
TI Locating leaks from underground gas pipes - exploiting thermodynamic
behaviour of gas by pressure-changes and measuring temp. difference by
IR thermograph.
DC Q69 S02 S03
IN LINDLAHR, W J
PA (GASA-N) VEB GASAN MITTEN
CYC 1
PI DD 274870 A 19900103 (199024)*
ADT DD 274870 A DD 1988-318909 19880815
PRAI DD 1988-318909 19880815
AB DD 274870 A UPAB: 19930928
By a gas-leak from an underground gas-pipe, a fall in the temp. of the
gas occurs due to the Joule-Thomson-effect. An **infrared**
thermograph is used to measure the temp. difference w.r.t. the
ground temp., enabling a leakage from a gas-pipe under pressure to be
located from the ground surface.
USE/ADVANTAGE - Underground gas pipes under pressure inspected for
gas leaks and declared to be safe. Checked from ground level. @
0/0

L27 ANSWER 16 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 1986-329131 [50] WPIDS
TI Solid-image sensing device for **thermography** - has
semiconductor photo detector to change view angle by selecting photo
detecting array NoAbstract Dwg 2/4.
DC U13
PA (FUIT) FUJITSU LTD
CYC 1
PI JP 61245570 A 19861031 (198650)* 8p
ADT JP 61245570 A JP 1985-86833 19850423
PRAI JP 1985-86833 19850423